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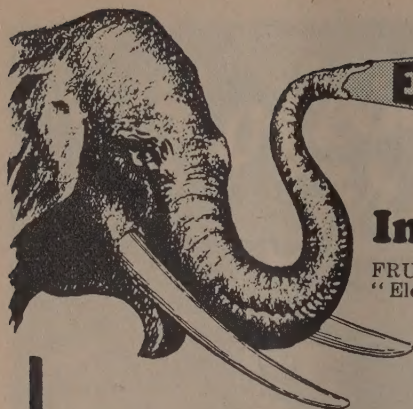
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CODLIN MOTH CONTROL.

CODLIN MOTH CONTROL formed the subject of an interesting address by Mr. R. T. M. Pescott, Entomologist, Victorian Department of Agriculture, at a recent meeting of the Mornington Peninsula Development League. The lecturer stated that tests at Harcourt and Doncaster had shown that lead arsenate and white oil combined gave satisfactory results. Oil also destroyed the red spider and controlled San Jose scale and mussel scale. White oil sprays were beneficial in districts similar to Harcourt. In colder districts such as the Mornington Peninsula, where the incidence of codlin moth was much less, it was doubtful whether the expense was justified.

Mr. Pescott said that the most effective spreaders were calcium caseinate and fish oil soap. At present it would appear that there was little to hope for in regard to codlin moth control by means of parasites.

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OBITUARY.

The Victorian fruit industry has lost a good friend in Mr. H. L. Tompkins, of Croydon, who recently passed away. Mr. Tompkins was a well-known figure at fruit-growers' conferences: he took an active interest in the Croydon Horticultural Society, of which he was President, also the Cool Stores' Association and other activities to benefit growers.

New Zealand Notes.

Small Fruits: Tomatoes, The Market Garden.

OCCASIONAL LIGHT CULTIVATION in fine weather to maintain fertility and destroy weeds is the chief requirement in this section at the present time.

For mulching Strawberries, straw or other suitable material should be prepared for bedding-down so soon as the fruit commences to set. Just prior to this a dressing of organic or chemical nitrogenous manure is usually applied with advantage. Where young plants are required for setting out next autumn a sufficient number of rows should be selected for special treatment. This consists of removing most of the flowers in order to check fruiting and encourage the early formation of runners. The mulch also is dispensed with, so that the runners may become established quickly and make strong plants for early planting in the autumn. These will be all the better if the number of runners from each plant is restricted. It has been amply demonstrated that this extra trouble to obtain strong, sturdy plants is well worth while, as very few will fail to establish and the cropping average will be improved. Big runners may be obtained by the liberal use of fertilisers, but this is a bad practice, as such plants are invariably soft and turn out unsatisfactory. The less fertilisers are used, among the stock plants for growing runners the better.

Tomatoes Under Glass.

In a number of instances damage from wireworm has been reported to be taking place in the Tomato crops under glass. These larvae of the click beetles are said to remain in that dangerous form for three or four years, which makes them a serious pest, and so should receive close attention. They are probably first brought into the house in the soil from the seedling boxes, and they get into the boxes through the soil and other materials being improperly prepared. This is a mistake that is far too common. Soil and decaying vegetable matter is collected without preparation, and the boxes are filled and sown. The soil from rough grassland and decaying vegetable matter is usually heavily infected with plant pests and diseases. Naturally, when it is used without preparation the glasshouse becomes infected at planting time.

It is for this reason that stacks of soil and manure are kept for two years or so to thoroughly decay and sweeten before they are used, and even then the precaution of steaming the soil is also sometimes taken. Most pests and plant-diseases in the soil may be destroyed by the use of steam, or the pests may be destroyed by means of a good soil fumigant; but either of these treatments when necessary should be given before planting. After planting is done one is greatly restricted in the use of remedies, and for the pest above mentioned trapping is probably the best under those circumstances.

Some crops of Tomatoes under glass fail badly at this period when the outside temperatures rise. This is chiefly due to insufficient ventilation during the warmer periods. If to this is added a generous supply of water, the disaster is about complete. Soft, flabby foliage, leaf-mould disease, and a very poor set of fruit is the usual effect. It is rather an easy mistake to give a crop too much of a good thing, especially heat and water. Tomatoes, however, demand a rather dry, buoyant atmosphere and a moderate temperature for maximum cropping. Recent experiments have affirmed the fact that 60 deg. to 65 deg. F. is the best range of temperature for this crop under glass. In bright sunlight it may rise higher, but if ample top ventilation is available and given, no harm

is done. Apart from such circumstances as that, high temperatures predispose the plants to disease and interfere with the setting of the fruit.

The Outside Tomato Crop.

The first planting of the outside crop usually takes place towards the end of October. Early maturity and the quality and quantity of the crop will depend very much on how the plants have been grown before planting out. Poor plants may be nursed with fairly good ultimate results, but it adds to the cost, and the returns are never so good. The hardening-off process now is very important, and should be carefully supervised. Reduce the water supply just before putting the plants out in the cradles, and cover them at night for a while. A day or two before planting out an application of Bordeaux mixture will usually be desirable, and land to be planted that is newly broken up should be sown with poison baits towards the end of an afternoon. If the land is in good heart apply the necessary fertilisers along the planting lines and mix them in. Carefully choose the weather for planting; plant in a furrow, cutting out each plant so as to disturb the roots as little as possible.

The Market Garden.

The hoeing of seedling crops should take precedence at this season. If the hoe is put through small seedling weeds on a bright dry day they are very quickly destroyed, but if the opportunity is missed wet weather may prevent the operation till the weeds have grown to such a size that the young crop cannot be readily seen.

Crops to be sown now on suitable land are Marrows, Pumpkins, Cucumbers, and Melons; also dwarf and Runner Beans. These are choice products in good demand which crop well on light rich soils that are well sheltered. The important crops harvested during winter and early spring are Celery, Leeks, Cauliflower, Broccoli, Brussels Sprouts, and Savoy Cabbage. These should be sown in beds outdoors now with a view to raising plants for planting out in December and January next.

Other crops sown now are main-crop Carrots, Beet, and Potatoes, also Lettuce, Spinach, and salads. Summer Cabbage and Cauliflower should be planted out.

New Zealand Spinach or Kohiki.

Where the land is light, and especially in dry districts, it is difficult to grow a satisfactory supply of green vegetables and salads for harvesting about midsummer. It is under such circumstances that New Zealand Spinach is valuable. In other parts of the world it is largely grown and highly prized for its generous clean crop under these difficult conditions. Kohiki (*Tetragonia expansa*) is a herb that is not uncommon on light lands about our sea coasts. Sown now very thinly in rows 3 ft. apart, it will thrive on a well-drained soil in a sunny situation. The plants should be thinned in the rows to 1 ft. apart. This crop is grown here, and much appreciated, but it should be much more commonly planted, especially under the more difficult conditions above mentioned.—W. C. Hyde, Horticulturist, Wellington, in "New Zealand Journal of Agriculture."

AUSTRALIAN DRIED FRUITS.

Sales in Great Britain.

The Commonwealth Dried Fruits Export Control Board advises that during the fortnight ending August 25, 704 tons of Australian dried fruits valued at a total of £37,920 were sold in Great Britain.

The average price of 317 tons Sultanias, was £64/10/8, and of 364 tons Currants, £45/14/- per ton.

British Preferences.

Excellent Results of Ottawa Conference.

THE OPTIMISM expressed in connection with the Imperial Economic Conference at Ottawa is thoroughly justified according to an official statement issued on behalf of the Federal Ministry. "A careful review of the achievements of the Conference thoroughly justifies the enthusiasm with which the official report has been received generally throughout the British Empire," the report states. "It is no exaggeration to state that the Conference has marked a new era in Imperial relationships Economic co-operation over a large area and based on definite principles has now been brought about."

Among the many items which were specifically dealt with in relation to preferences at the Ottawa Conference are the following:—

Fresh Apples and Pears, 4/6 a cwt.

Canned Apples, 3/6 a cwt., plus sugar duty.

Other canned fruits, 15 per cent. ad valorem, plus sugar duty.

Dried Fruits.—Sultanas and Lexias, 10/6 a cwt.; Currants, 2/- a cwt. (unchanged); other dried fruits, 7/6 a cwt.

Honey, 7/- a cwt.

Fresh Oranges, 3/6 a cwt. from April 1 to November 30.

Fresh Grapefruit, 5/- a cwt. over the same period.

Grapes (not hot-house), 1½d. a lb. from February 1 to June 30.

Wine, not exceeding 27 degrees proof spirit, will receive an increased margin of preference of from 1/- to 2/- a gallon.

The following preferences are in the South African agreement only:—

Peaches and Nectarines, 14/- a cwt. from December 1 to March 31.

Plums, 9/4 a cwt. for the same period.

Preference on Apples and Pears.

On the subject of preference of 4/6 per cwt. on Empire grown Apples and Pears, Mr. F. R. Mellor, fruit exporter and a member of the Executive of the Victorian Fruit Marketing Association, writes as follows:—

The duty of 4/6 per cwt. on Apples equals slightly over 1/7 per case, which should prove to be of considerable advantage to Australian growers. It must be remembered that the 10 per cent. duty which operated last season was only a temporary measure, and would have lapsed had not a new arrangement been made. The position which has resulted from the Ottawa Conference, i.e., a British duty of 1/7 per case against foreign Apples whilst Australian enter free, should be compared with that of two years ago, when there was no preference whatever to Empire-grown fruit.

Assuming the landed cost of American Apples to be about 10/- per case, the old duty of 10 per cent. would work out at about 1/- per case. It is difficult to say exactly what was the effect of the imposition of this duty, but, generally speaking, there appears to have been no increase in price to the British consumer. This means that American growers or shippers have carried the burden—that is, their net proceeds have been reduced by about 1/- per case. The new duty of 1/7 per case is likely to reduce their net proceeds of sales to Great Britain still further. To see the effect of this, it is necessary to go right back to the grower.

Over the five-year period 1925-26 to 1929-30 inclusive, the estimated average price received by the producer in

America was 122 cents, normally equal to about 5/1 per bushel. As the British wholesale buyer will now have to pay 1/7 per case duty, he must deduct that amount from the price to the grower. The average price of 5/1, less 1/7 per case duty, leaves an average net return of 3/6 per case, which is a heavy reduction to the grower. It is probable that it will pay the American grower better to sell more of his Apples on his own market, and to curtail shipments to Great Britain, thus leaving a wider market for Australian and New Zealand Apples.

Apart from the preference on Apples and Pears, Australian producers will benefit from the Ottawa Conference through the reduction in duties on imports from Great Britain—firstly, by lower costs of production, and secondly by the encouragement of "two-way" trade, which is so necessary to enable the shipping companies to consider a reduction in freights.

Sultanas and Lexias.

Regarding Sultanas and Lexias, it will be noted that the preference has been increased from 7/- to 10/6 a cwt.

The Dried Fruit Export Control Board is awaiting the full text of the agreement, and will include their comments in their annual report, to be issued shortly.

In the meantime, it is noted with satisfaction that the preference has been increased by 50 per cent. The effect of this cannot readily be computed in figures—as it were crediting the Australian producers with the difference in the preferential rate, but rather the important aspect is that of a more stabilised market being available in Britain with increased protection for Empire producers.

Canned Fruits.

Empire producers of canned fruits are now to receive a preference of 15 per cent. ad valorem. Until March last, there was no preference or duty on canned fruit entering Great Britain. From the first of March, a duty of 10 per cent. was placed on foreign canned fruit, Empire canned fruit being free, less the duty on the Empire sugar in the syrup, which worked out at about 2 per cent. The 10 per cent. duty was an inclusive one, which on the sugar content of foreign canned fruit was equal to about 4 per cent., plus the duty on the fruit in the tins of 6 per cent. (making the over-riding 10 per cent.). The new preferential arrangement is 15 per cent. ad valorem, to which will be added the 4 per cent. on the sugar content, making the duty about 19 per cent. As Empire canned fruit producers will presumably pay the 2 per cent. sugar duty, it will leave a net preference of 17 per cent. ad val. This works out at about 1/5 per dozen 30 oz. tins.

Mr. W. J. Adams, Secretary Canned Fruit Control Board, states that the Board is awaiting the official details from the Ottawa Conference. In the meantime, the foregoing would appear to be a summary of the situation.

This preferential arrangement will be serviceable. It will mean that Empire canned fruits on the British market will have this helpful arrangement during the time their fruits are available. Great Britain needs about 3,000,000 cases of canned fruit, the bulk of which for some years will still be imported from foreign countries. Australian canned fruit, however, is steadily gaining in reputation, and the decisions at the Ottawa Conference are a further step in advance towards the development of the canned fruits industry in this country.

The Orchard Spray Programme

Control of Pests Attacking Apples.

(By the Tasmanian Horticultural Division.)

ONE OF THE MOST IMPORTANT works undertaken by the Horticultural Division of the Department of Agriculture is the investigation of the different pests attacking fruit trees and the determination of effective and economic means of control. During the last decade the life histories of pests have received careful study, and a number of experiments have been directed towards obtaining the most successful treatments.

In this way the most serious fungus and insect pests have been successfully combated. The results of the experiments have been made available to the fruitgrowing industry, and the individual orchardist, if his area is affected by the particular pest, has been able to incorporate the treatments recommended into his spray programme.

Whilst there will always be variations in spray treatments, according to such factors as climatic conditions, varieties, and prevalence of the pests encountered, there are a number of the latter which may be recognised as common to the majority of Apple areas in cultivation, viz., codlin moth, black spot, red spider, and powdery mildew.

As a result of the experiments mentioned, orchardists have adopted slightly differing programmes of spray control to suit their particular conditions, and, in the interests of economy, often involving combinations of two or three different sprays.

It was with the object of testing and comparing these programmes that a series of experiments was commenced this season, the work being conducted in a district which is generally affected by the diseases and pests mentioned, and on an area known to be more than ordinarily subject to their attacks.

The plot eventually chosen for experiment consisted of a block of 18-year-old Sturmers, planted at about 17 feet square, in the Geeveston locality. This variety was considered most suitable, as not only is it by far the most extensively grown, but the leaves and fruit are somewhat sensitive to spray injury.

Five individual spraying treatments were adopted, full details of which are given below.

Plot 1.—Untreated: In order to have a suitable check on the development of spot and other diseases in the area, eight trees were retained as an unsprayed control. Owing to the prevalence of red spider, however, it was found necessary to apply insecticides at both the November and December applications, a new pyrethrum spray and summer oil emulsion being chosen for this purpose. Arsenate of lead was also added to these in the ordinary way for codlin moth.

Plot 2.—Weak Dry Lime-Sulphur Programme:

	Water. Gals.
Greentip—4 lb. dry lime-sulphur	24
Pink—2 lb. dry lime-sulphur	20
Calyx— $\frac{3}{4}$ lb. dry lime-sulphur, plus $2\frac{1}{2}$ lb. hydrated lime	25
Fourth Spray— $\frac{3}{4}$ lb. dry lime-sulphur, plus $2\frac{1}{2}$ lb. lime	25
Fifth Spray— $\frac{3}{4}$ lb. dry lime-sulphur, plus $2\frac{1}{2}$ lb. lime	25

Arsenate of lead powder was added at the rate of 1 lb. to 30 gals. in the post-blossom sprays.

The object of this programme was to test out dry lime-sulphur used in quantities equalling the price paid for the ordinary lime-sulphur in the "greentip" and "pink" applications. The last three spray applications, however, were made in accordance with the recommendations of the Ohio Experimental Station, U.S.A., following the results of a number of experiments carried out with great success over a five-year period by Lewis and Ballou.

Plot 3.—Liquid Lime-Sulphur Programme:

	Water. Gals.
Greentip—1 gal. lime-sulphur	12
Pink—1 gal. lime-sulphur	20
Calyx—1 gal. lime-sulphur	60
Fourth Spray—1 gal. lime-sulphur	80
Fifth Spray—1 gal. lime-sulphur	100

Arsenate of lead powder was added at the rate of 1 lb. to 30 gals., and a spreader was also incorporated in the post-blossom sprays.

As lime-sulphur has both insecticidal and fungicidal properties, and as this spray is manufactured locally, or can be made on a small scale by the grower, the advantages of a satisfactory lime-sulphur programme throughout the year are self-evident. Accordingly the above-mentioned programme was carried out, and full details of the results follow later.

Plot 4.—Strong Dry Lime-Sulphur Programme:

	Water. Gals.
Greentip—8 lb. dry lime-sulphur	24
Pink—4 lb. dry lime-sulphur	20
Calyx—4 lb. dry lime-sulphur	60
Fourth Spray—4 lb. dry lime-sulphur	80
Fifth Spray—4 lb. dry lime-sulphur	100

Arsenate of lead powder was added at the rate of 1 lb. to 30 gals. in the post-blossom sprays.

Chemical analyses have shown that it requires from 4 to 5 lb. dry lime-sulphur to equal the poly-sulphides, etc., contained in 1 gal. of liquid lime-sulphur. In accordance with this formula a dry lime-sulphur programme was adopted which would, as far as practicable, be comparable with the liquid lime-sulphur programme adopted in Plot 3.

Plot 5.—Iron Sulphide Excess Lime-Sulphur Spray:

	Water. Gals.
Greentip—3 lb. sulphate of iron; 5 gal. lime-sulphur	50
Pink—1 gal. lime-sulphur	20
Calyx—1 gal. lime-sulphur, plus 2 gal. flour paste	40
Fourth Spray—1 gal. lime-sulphur, plus 5 gal. flour paste and 5 lb. fine sulphur	100
Fifth Spray—1 gal. lime-sulphur, plus $2\frac{1}{2}$ gal. flour paste and $2\frac{1}{2}$ lb. fine sulphur	100

Arsenate of lead powder was added at the rate of 1 lb. to 30 gal. in the post-blossom sprays.

The object of this programme was twofold—

(i) To try and eliminate the two sprays at the late dormant stage (viz., iron sulphide spray for mildew control, and strong lime-sulphur spray for the "greentip" spot spray) by the use of excess lime-sulphur in the iron sulphide spray.

(ii) To further test the sulphur-flour paste combinations for post-blossom sprays.

Plot 6.—Bordeaux Mixture Followed by Lime-Sulphur Sprays:

Greentip—6 lb. copper sulphate; 4 lb. lime, plus 2 gal. oil emulsion	40
Pink—1 gal. lime sulphur	20
Calyx—1 gal. lime-sulphur, plus 1 lb. arsenate of lead powder	40
Fourth Spray—5 lb. atomic sulphur, plus 1 lb. arsenate of lead powder	40
Fifth Spray—5 lb. atomic sulphur, plus 1 lb. arsenate of lead powder	40

The weights given above for the atomic sulphur refer to the paste form.

Experience has shown that, from the point of view of spot and mildew control, this programme has proved very satisfactory in the Huon districts. The cost, however, is somewhat greater than that of most of the programmes tested, and some alteration in the post-blossom sprays would seem desirable in this respect in future trials.

Dates of Application.

Throughout the experimental area the dates of the various spray applications were as follows:—

Greentip Spray—September 24.

Pink Spray—October 19.

Calyx Spray—November 4.

Fourth Spray—November 25.

Fifth Spray—January 5.

At the time of each application the weather conditions were favorable, being dull, dry, and calm during the first two applications, and rather hot during the third, fourth, and fifth applications. Practically no fruit or foliage injury was experienced, though the post-blossom sprays were applied during hot weather.

In regard to the actual mixing of the sprays used, the

general system adopted was to add the "spreader" to the water first, mix the other materials in the usual recommended ways, and add the arsenate of lead last.

No spreader was used with the dry lime-sulphur, as it was not recommended by the manufacturers. This material was found to mix more easily when thoroughly wetted with water prior to adding it to the water in the tank. Good agitation was found essential, especially when arsenate of lead was also incorporated.

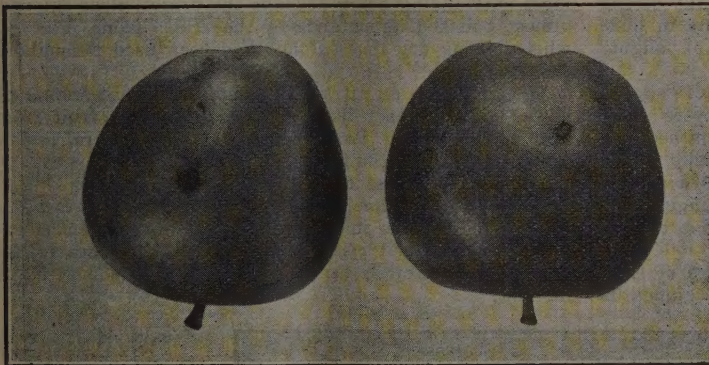
Procedure.

Each plot, with the exception of the "control," consisted of three rows of four trees each, all of which were fairly uniform in size, growth, and cropping. Observations were made at regular intervals throughout the season, and at harvesting two representative trees from the centre row in each plot were selected, and the fruit picked and carefully graded for spot and other defects. The numbers on which the final results are based varied between 1,700 and 2,200 fruits in each plot, and the indications noted are further supported by observations of a more general nature on the remaining trees.

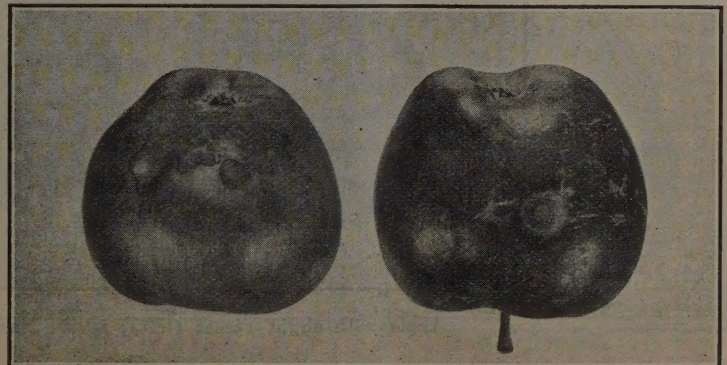
Black Spot.**Table I.**

Plot.	Total No. of Apples. Harvested.	Severe. Spot. %	Slight Spot.* %	Total. Spot. %	Market-able Fruit. %
1	1,201	46.7	24.6	71.3	53.3
2	2,298	4.3	10.8	15.1	95.7
3	1,693	5.5	6.8	12.3	94.5
4	1,708	4.8	5.4	10.2	95.2
5	1,807	3.7	7.6	11.3	96.3
6	1,744	1.3	5.2	6.5	98.7

* "Slight" spot: $\frac{1}{4}$ -inch, or less than $\frac{1}{4}$ -inch in the aggregate.



Apples affected
with slight spot.



Apples severely
affected with spot.

Red Spider.

Careful observations were made at intervals, and a check maintained on the occurrence of red spider throughout the season. Weather conditions were particularly favorable for its development, and in November it became so serious on the unsprayed control plot that it was found necessary to apply an insecticide, a new pyrethrum spray being selected for this purpose. White summer oil was also applied to several trees, but in both cases only a partial control was effected.

Little spider was observed on any of the sprayed plots, though on Plots 2 and 6 the insects could be found without much difficulty, but not in numbers large enough to cause noticeable damage.

The excellent control of spider obtained on almost all the plots in a season when this pest was particularly prevalent shows the advantages obtained from the "pink" lime-sulphur treatment. The presence of spider on Plot 2 might be explained by the rather weak solutions applied at the "pink" and "calyx" applications, and in the case of Plot 6 by the absence of the later weak lime-sulphur treatments, atomic sulphur having displaced them.

A short study of Table I. will show that in every plot the spraying programmes adopted have given a reasonably satisfactory control of spot, varying from 85 per cent. under the weak dry lime-sulphur treatment in Plot 2 to 93 per cent. clean fruit under the Bordeaux treatment in Plot 6.

The variations in spot control of Plots 3, 4, and 5 are practically negligible, though the small margin of 2.1 per cent. between the strong dry lime-sulphur programme and the comparable liquid lime-sulphur programme would seem to indicate that the claims of the manufacturers in regard to the dry material are fully justified. Further tests, however, will be made next season on similar lines.

The weak dry lime-sulphur in Plot 2, whilst reducing the percentage of spot, when compared with the control, by some 56 per cent., was evidently not sufficiently strong to check its later development, and this accounts in some measure for the comparatively high percentage of "slight" spot.

It will be noticed that whilst the percentage of "slight" spot is very similar in Plots 3, 4, and 6, "severe" spot shows considerable differences, and in Plot 6 has been reduced to a negligible amount. This undoubtedly shows the greater effectiveness of copper sulphate as a control for the early infections of the black spot fungus, and the advantages likely to be gained from its use at this period.

In the last column of Table I. the percentage of fruit marketable under the present grades and export standards

is indicated. From this it will be seen that spraying has practically eliminated waste fruit, whereas in the unsprayed "control" almost half of the fruit would have had to be relegated to the factories.

Mildew.

It had been intended in the first place to take records of the development of mildew on the shoot-tips and foliage, but this disease in the present season was inconspicuous, and no figures could be obtained.

Table II.—Russetting and Other Fruit Characteristics.

Plot.	Severe Russet. %	Slight Russet. %	Total Russet. %
1	1.15	1.15	3.3
2	2.1	5.5	7.6
3	1.5	3.9	5.4
4	1.5	3.3	4.8
5	1.5	5.5	7.0
6	0	4.4	4.4

Slight russet: One-quarter of Apple-skin russeted.

Severe russet: More than one-quarter of Apple-skin russeted.

Contrary to earlier expectations, the quantity of russeted fruit was remarkably low, most of the Apples being clear-skinned and well colored at harvesting.

The most russetting occurred, somewhat unexpectedly, in Plot 2, and the least in Plot 6. In Plot 2 the hydrated lime additions in the post-blossom sprays may have had some bearing on the case.

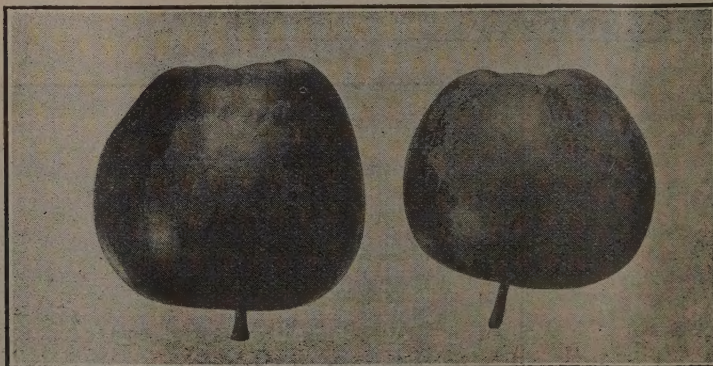
Russetting was expected in Plot 5, where a certain amount of marginal leaf-scorch followed the "calyx" spray, and to a lesser extent the fourth application. The lime-sulphur plot also showed slight marginal leaf-scorch following the fourth application, and it may have been this spray that produced the russet noted in Table II.

Quite noticeable differences were apparent in the general appearance of the fruit from the different plots, the most outstanding being perhaps the bright, clear-skinned, almost polished appearance of the fruit from Plot 4, where strong dry lime-sulphur had been used throughout the season.

Though quite an attractive sample, the fruit from Plot 5 was much greener than the average, whilst fruit from Plot 6 was rather less smooth in skin, texture, and a trifle smaller and duller.

Cost of Spray Materials.

At the present time, when the margin of profit is often small and growers in every possible way are endeavoring to reduce their costs of production, reference to the cost of the materials used in the recent tests may be of interest.



Apple with slight russet (left); severe russet (right).

Table III.

Plot.	Total Cost (Approx.) of Sprays on Plot.	Estimated Cost Per Tree.	Estimated Cost per Acre.
	s. d.	d.	£ s. d.
1	—	—	—
2	8 0	8	5 0 0
3	7 6	7½	4 13 9
4	11 5	11½	7 0 7
5	8 7	8½	5 6 3
6	9 6	9½	5 18 9

*These trees were sprayed later for codlin moth and spider.

In the above table full details are given in regard to the cost of the spray materials, and the estimated cost of these per tree and per acre have been worked out for purposes of comparison.

The quantity of spray used on each tree during the season worked out at approximately 7 gallons, or from 1 to 1½ gallons at each application.

As, under conditions experienced in the past season, the variation in quantity of marketable fruit under all treatments was only a matter of some 4 per cent., it would not be unreasonable to select the cheapest of these, viz., Plot 3—£4/13/9—the complete lime-sulphur programme, as being the most generally commendable. Further examination, however, shows that, with a reasonable market and a crop exceeding 400 bushels per acre, it would pay to apply the programme adopted in Plot 6, as the extra 4 or 5 per cent. of marketable fruit, at, say, a profit of 2/- a case, would more than counter-balance any saving effected in spray materials.

The most expensive treatment, as given in Plot 4, is scarcely justified at the present time by the results obtained. Nevertheless, a reasonable control of spot was effected, and the bright appearance of the fruit and clear skin are points worth further consideration. If dry lime-sulphur could be produced at a reasonable price, and the results already obtained persist from season to season, there can be little doubt that this material would soon become popular.

A satisfactory control of all pests was effected at a reasonable cost in Plot 5, and with certain alterations and adjustments a programme more effective and cheaper should be easily constructed.

It is well known that the incidence and severity of the ravages of insect and fungus pests varies considerably from season to season, and in order to fully test out a spray programme the treatments should be carried out over a period of at least three years.

Observations and deductions in the above account must, therefore, be regarded as applying to conditions experi-

enced in the past season, and further work must be done to definitely establish these results. Nevertheless, there can be little doubt that many of the points noted will hold good, and the results taken as a whole may prove useful.

It is hoped to continue the present trials during the coming season, and perhaps extend the lines of investigation over a wider field.

Summary.

(1) The results obtained from a series of five different spray programmes carried out during the 1931-32 season are described in detail.

(2) Although spray mixtures used at strengths often considered to be somewhat risky were applied in many instances, very little leaf-scorch or russetting was experienced. The presence of effective spreaders may have contributed towards this freedom from injury.

(3) The best quality and most attractive fruit was produced on the dry lime-sulphur plot, though the spot control was not quite so effective.

(4) All the spray programmes adopted effected a good control on the development of spot, giving from 85 to 93 per cent. clean fruit and from 95 to 99 per cent. marketable fruit; whereas, the unsprayed control plot produced only 29 per cent. clean fruit and 53 per cent. marketable fruit.

(5) The Bordeaux lime-sulphur programme in Plot 6 gave the largest percentage of clean fruit, only some 6 per cent. being affected by spot.

(6) The complete dry lime-sulphur programme in Plot 4 gave a good control of spot, and compared very favorably with the complete lime-sulphur programme in Plot 3.

(7) The cheapest spray programme in the experiment was the complete lime-sulphur treatment, the material for this costing about £4/13/4 per acre. This produced a good sample of marketable fruit, but, allowing for the greater proportion of spot, it is questionable whether, in the past season, it was the most economical.

(8) Dry lime-sulphur is at present too expensive to be considered as a regular spray.

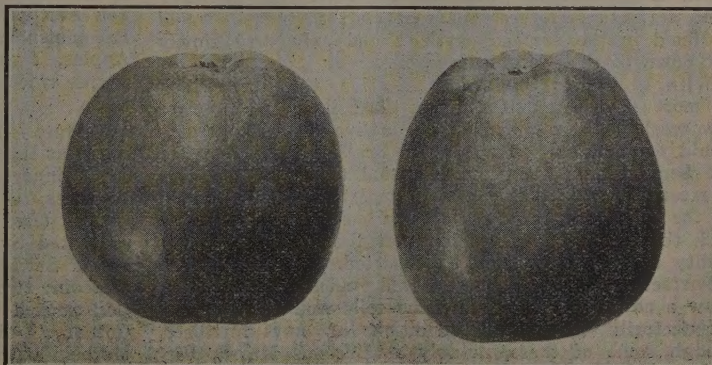
(9) The Bordeaux-lime-sulphur programme, with some reduction in cost of the post-blossom sprays, might be regarded as the most effective and economical programme for general use in areas subject to black spot fungus.

The preparation and application of the different sprays were under the supervision of the Chief Horticulturist (Mr. P. H. Thomas) and the staff of the Horticultural Division (Messrs. H. A. Turner, T. D. Raphael, and A. S. Brennan).

Appreciation is recorded of the generous assistance rendered by Mr. E. Sharpe, in making an area of his orchard available for the experiment.—"Tasmanian Journal of Agriculture."

Fig. V.

Clear-skinned Fruit from Plot 4.



Manures for Fruit Trees.

Balanced Manurial Programme Essential.

Importance of Spring Applications.

THE MANURING OF FRUIT TREES formed the subject of an appreciated lecture by Mr. R. A. Boyle, M.Sc., A.A.C.I., before a recent meeting of fruitgrowers at Harcourt, Vic. The lecturer stated that a fruit tree is sensitive to the influences of many factors. Apart from climate, soil and plant food balances, there were the effects of pruning, pollination, grafting, etc. It will thus be impossible to specify a particular quantity of manure annually for Apple trees on varying soils.

Research workers could only indicate how the plant food balance might be effectively adjusted in accordance with changes in any of the other factors. In this research work fertiliser manufacturers were rendering liberal assistance.

Generally speaking, all orchards needed manure of some kind or another. Two important points were, however: (1) a better balance in relation to all other factors; (2) a possible reduction of expenditure. It was a question, not of whether to manure or not, but of how can manuring be made more profitable.

In dealing with established facts or high probabilities, the lecturer mentioned the following:—The distinct functions of nitrogen, phosphate and potash. Nitrogen in its effect upon growth and fruit setting, phosphate on root development, blossoming and fruit maturity, and potash in its influence on general health. These effects were more dependent upon the balance existing between them and of other factors as well, than upon the actual amount available of the particular plant food itself.

Secondly, without suitable soil conditions and beneficial bacteria activity, the best response from fertilisers could not be obtained. The soil needed abundant organic matter, either animal refuse or by growing and turning under cover crops.

Regarding specific plant foods, the unit value system was dealt with. The three forms of nitrogen, namely, protein, ammonia and nitrate nitrogen were explained and compared. For fruit trees where the maximum nitrogen was desired between bud burst and fruit set, the ammonia form, owing to its ready availability and resistance for leaching was to be desired.

There were certain important considerations bearing upon method and time of application. The fact that ammonia, phosphate (all forms) and potash, were fixed or held by soil particles until changed to forms which went into the soil solution, rendered it important to study depth of application. There was a danger that in heavy soils, fertilisers merely broadcast on the surface, would be fixed in the surface particles and only very slowly get down to the root feeding zone.

With regard to time of application, the plants took up most of their nutrients from the soil during the first few weeks of growth, then the active flow of nitrates would eddy out, as it were, two or three months after the beginning of the growth period to enable the tree to ripen its fruit and wood in normal time. This pointed to the advisability of applying a complete manure at such time prior to blossoming that the maximum availability at that time could be expected.

Surface soils should be rendered sufficiently fertile to grow a natural cover crop. Some soils would grow trees satisfactorily without the addition of any fertiliser, though some of these, notably at Bacchus Marsh, Vic-

toria, appeared to require potash. The majority of Apple growing soils in Victoria, in the lecturer's opinion, required some additional nitrogen to promote sufficient growth and leaf size in the trees. At the present stage of investigations phosphate and potash could be regarded only as an insurance.

Considering the necessary correct balance between all the factors, phosphate deficiency in Victorian soils, and the possible effect of potash on the quality of fruit and health of the tree the lecturer recommended (in addition to an autumn dressing of superphosphate to promote the growth of a cover crop) the application prior to blossoming of a mixed fertiliser on all orchard soils except those obviously naturally rich and already maintaining thoroughly healthy trees.

A hearty vote of thanks was accorded Mr. Boyle for his valued address.

CONCENTRATED NITROGENOUS FERTILISER.

An unusual opportunity is offered to fruitgrowers by Messrs. Henry H. York & Co. Pty. Ltd., who intend to clear their stocks of imported synthetic fertilisers. The well-known and highly concentrated **Nitrogenous Fertiliser Urea** (46 per cent. nitrogen) is offered at £20 per ton, representing a unit price of 8/9, which is considerably lower than any price on offer at present. This stock of Urea has "caked" to some extent, but is easily broken up, whilst if applied in the irrigation water will give no trouble.

Calnitro, containing 20.5 per cent. of nitrogen, which is the same as sulphate of ammonia, except that in this case half of the nitrogen is nitrate nitrogen, and the other half ammonia, whilst the whole is combined with the equivalent of 36 per cent. of agricultural lime, is offered at the same price as sulphate of ammonia—namely, £11/2/- for cash with order. This fertiliser is in first-class condition, and should make an excellent top-dressing for fruit trees after the fruit has set. Full particulars may be obtained from the above firm, at 573 Lonsdale-street, Melbourne.

FERTILISER RECOMMENDATIONS.

"Fertiliser Recommendations for Horticultural Crops" is the title of a most helpful leaflet issued by the Nitrogen Fertilisers Pty. Ltd., 360 Collins-street, Melbourne. Recommendations are given for mixed fertilisers for Apples, Pears, stone fruits, berry fruits, Passionfruit, citrus, vines, Tomatoes, vegetables and tobacco.

Mildura.—There was a good display of dried fruit and citrus at the Mildura Fruit Show held during July. Leading winners were:—Sultanas, F. Skinner (Koorlong); Currants, C. R. Griffiths (Red Cliffs); Lexias, S. H. Clarke (Red Cliffs). These were also winners of cups presented by the Victorian Dried Fruit Board. Unprocessed Sultanas, F. Skinner. Citrus.—District collection, Merbein; two packed cases of Oranges, Irymple Packing Co.; packed case, R. Henderson; collection of citrus, R. Gordon. A display of 180 products grown or made in the Merbein district was staged and attracted much attention.

RE-WORKING APPLE VARIETIES.

THERE ARE TOO MANY unprofitable varieties of Apples—as well as other fruits—growing in our Australian orchards.

Now is the time for re-working Apples to better varieties.

The old method of beheading the tree and growing on from grafts has been superseded. The old method caused a loss of several years' fruiting, and frequently induced the destructive fungus, *Polystictus versicolor*. The Superintendent of Horticulture in Victoria, Mr. J. M. Ward, is arranging for demonstrations of the new method of re-working fruit trees this spring.

Method.—Instead of cutting a tree hard back to the stump, the main arms are shortened back by removing a foot or two of the tip as well as all fruit spurs and

side branches. Strong growing laterals are left at intervals along the main arms. A large number of buds or scions (grafts), anything from 100 or more, are then worked on to the main arms from top to bottom of the tree. The scions can be grafted during September. These can be inserted as a side-bark-graft, by slitting the bark



Fig. 1.—Several hundred buds and scions have been placed on this Apple tree. All new growth now showing is from these scions and buds.



Fig. 3.—To overcome the attacks of *Polystictus versicolor* and to quickly change one variety to another, a large number of buds and scions have been put into this tree. All the new growth is from scions and buds.



Fig. 2.—A Waterloo Seedling Apple tree grafted to Tasmania (Democrat), in 1922.

Grafting was carried out high up on the branches, and a considerable number of scions were grafted on each limb, and a quick change-over of varieties resulted. In 1927 this tree yielded 28 cases. Photograph was taken November, 1928, at Mrs. H. D. Calvert's orchard, "Waterloo," Huon, Tasmania.



Fig 4.—An Apple tree cut hard back and grafted, which became affected with *Polystictus versicolor*. Photograph taken at Brook's Bay, Tasmania.

and carefully tacking the scion in place with a copper tack and then finishing the job by applying a little grafting wax or similar material at the point where the union takes place. Scions are also put on suitable laterals all over the tree.

When buds or grafts, duly spaced, begin to grow, all



An Apple tree in the same orchard as shown in Fig. 4, only partly cut back.



An instance where an Apple tree has been re-worked high up. All the new growth is from either grafts or inserted buds.

The six illustrations by courtesy "Journal of Agriculture," Victoria.

other growths should be suppressed, and, in addition, the new growths should not be allowed to grow too long before tipping. By this method the re-worked trees can

be relied upon to furnish a new crop in two seasons. Four photographs are enclosed showing details.

This method of re-working, or the changing over of one variety to another means a lot of work, both during the grafting or budding operations, and the growing season, as naturally enough there will be a heavy growth of laterals all over the tree as the result of the removal of so much growth from the main arms.

This system of re-working applies particularly to Apple trees, especially in districts where the die-back fungus—*Polystictus versicolor*—is present, and there are very few districts free from it. Many Apple-growers have already had the experience of having had their trees die-back after re-working the stump. It may take from 2 to 5 years before such trees die after the hard cutting back, or, on the other hand, the re-worked tree may make healthy growth and everything be O.K. However, there are altogether too many Apple trees dying as the result of cutting back to the stump.

NEW ZEALAND.

Final Export Figures, 1932 Season.

With the last shipment on the "Port Gisborne," which sailed from Wellington on June 18, we give below details of the season's export of Apples and Pears, together with a table showing market distribution. The district totals are as follows:—

	Apples.	Pears.
Auckland	170,427	5,594
Poverty Bay	22,530	448
Marlborough	58,791	683
Hawke's Bay	252,084	42,029
Nelson	941,540	39,434
Canterbury	11,189	1,936
Wairarapa	18,345	343
Wanganui	1,383	—
Otago	25,289	4,013
Grand totals	1,501,578	94,480

The following table comprises Apples and Pears combined, showing the distribution as between the main markets.

Canada	15,167
South America	50,834
Continental Markets	168,888
London	935,525
Southampton	189,748
Liverpool	82,833
Glasgow	75,768
Manchester	50,564
Avonmouth	26,731

Total 1,596,058

Up to June 27, the arrivals in United Kingdom totalled 1,120,600 cases, and 263,000 cases were due between that date and July 5. With the exception of 6,000 cases on the "Port Gisborne," that completed our consignments to United Kingdom. On June 27, 326,000 cases had been placed in cool store awaiting a more favorable market.—"N.Z. Orchardist."

Sam: "I heard Joe was trying to get a Government post? What is he doing now?"

Tam: "Nothing; he got the post."

Where do the jellyfish get their jelly? Why, from the ocean currents, we suppose.

RE-WORKING ORANGES.

Now is the Time for Spring Budding.

A GOOD TYPE NAVEL will bring 2/- to 4/- per case on the local markets.

The method of re-working Orange trees differs slightly from that of deciduous fruit trees. The Department of Agriculture advocates cutting out the centre limbs, leaving the lower part of the tree intact. Young shoots will grow from the vicinity of the cuts, and the best placed of these are selected for spring budding in September or October, or autumn budding during March or April. We prefer the autumn to the spring budding, but both are recommended. The lower branches that are allowed to remain are useful in two ways—one, to protect the bark on the tree trunk from injury from the hot summer sun, and, secondly, the tree is producing, say, a third of its normal crop until such time as the growth from the newly inserted buds produce fruit 2 to 3 years hence, when this time arrives the remainder of the old growth can be removed.

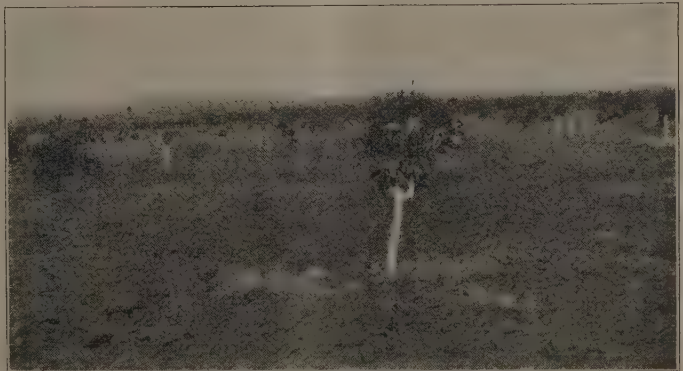


Fig. 2.—Spring Growth from Autumn Buds.—This picture gives a close-up view of one of the young re-worked (budded) Navel Orange trees shown in Fig. 3. (Note where the old wood has been cut off above where the bud has started to grow.)



Fig. 1.—Removing a Bud from a Bud Stick. Some budders prefer to remove the bud by commencing the cut from the top side of the bud. In this instance the cut is made upward.

Fig. 3.—Young “dud” Washington Navel Orange trees worked-over by budding to buds taken from trees that produced good quality fruits. The trunks were lime-washed with a view to protecting the bark from the heat of the sun.



Citrus News and Notes.

BROWN ROT OF CITRUS.

Control Measures Described.

BROWN ROT OF CITRUS is described as a serious disease that can easily be prevented, by Mr. H. A. Pittman, B.Agr.Sc., Plant Pathologist, W.A. Department of Agriculture, in an article in the "W.A. Journal of Agriculture."

Oranges and Mandarins develop a dull brown area spreading outwards until the whole fruit may be involved. Affected Lemons develop a washed out, tightly drawn, pale yellow or almost white color on the diseased areas. The leaves of Lemons, Oranges and Mandarins develop dark colored, water-soaked areas usually at the tips, sometimes in the middle of the leaves. The winter form of brown rot can readily be prevented by spraying the lower two-thirds of the tree in the autumn, say at the middle to the end of April, with home-made Bordeaux mixture, 5-5-50, or, if preferred, with commercial ready-mixed so-called "Bordeaux" powders, at the rate of one pound to five gallons of water. To ensure the maximum possible protection, $\frac{1}{2}$ lb. of calcium caseinate spreader should be added to each 50 gallons of spray. In mixing the spreader, make the required amount of calcium caseinate into a paste in a billycan, jug, or other suitable receptacle by putting the caseinate into the dry container and then adding as much water by volume as there is caseinate. Stir, so as to form a thin paste and, when made into a paste, dilute with water and add to the mixture in the spray tank, keeping the agitator going during the process.

The trunks of the trees should be well drenched with the spray as a precautionary measure against "Brown Rot gummosis," which has been found on the trunks of citrus trees, especially Lemons, in several orchards in this State on very heavy moist soils.

To guard against further infection in the spring by the "Californian" organism, spray the lower two-thirds of the trees with Bordeaux, 5/5/50 in late winter or very early spring, say in the first or second week of August.

If more than the lower two-thirds of each tree is sprayed, a serious increase in the number of scale insects is likely to occur, owing to the killing off, by the Bordeaux mixture, of the beneficial fungi which parasitise the scale insects and help to keep them in check.

When spraying the trees, the soil below, and also in between the trees, should be sprayed with the Bordeaux, as infection carries over from one year to another in diseased tissues in the soil. Moreover, quite apart from its fungicidal value, Bordeaux mixture has a tonic effect on the growth of citrus trees; crushed bluestone up to two or three pounds weight per tree being applied annually to the soil in certain cases to prevent or cure the physiological die-back and gumming disease known as "Exanthema."

Great Britain is the world's largest importer of citrus, yet British countries produce only 6 per cent. of the world's supply. The largest suppliers are Spain (33 per cent.), and U.S.A. (27 per cent.).

The Australian citrus industry spent £32,110 in freights in the 1930-31 export season, made up as follows:—New Zealand, £22,034; Canada, £8,000; United Kingdom, £31; Eastern and other countries, £2,025.

STORING OF LEMONS.

Officers of the N.S.W. Department of Agriculture recently emphasised the advisability of harvesting the most suitable Lemons before they became too mature, and putting them in store to meet the more favorable market in spring and summer.

Lemons which are suitable for this purpose should be well shaped specimens from normally healthy trees. They should be green in color and about $2\frac{1}{2}$ in. to $2\frac{3}{4}$ in. in diameter.

Providing the Lemons are clipped from the trees and handled carefully, there should be very little loss from blue mould.

During the four months the Lemons are stored, the only other decays likely to occur are those of the stem-end decay type, but these may be minimised largely by harvesting fruit intended for storing before it begins to yellow, and as far as possible storing fruit clipped only from leafy twigs.

When some weeks have elapsed, too free access of air should be prevented, and efforts made to maintain a fairly high degree of humidity to guard against excessive wilting and shrinking.

PRESERVATION OF ORANGES.

Spraying with Paraffin Not Recommended.

THE CITRUS PRESERVATION COMMITTEE of the Council for Scientific and Industrial Research has recently been reviewing the investigations which it has been conducting for the last four years into the best method of handling Oranges that it is desired to store for any great length of time. An account will be published of the Committee's activities, and this account will include the conclusion which the Committee has come to in regard to the various processes investigated.

As the Navel season is at present at its height, however, it is of particular interest to know that the Committee do not recommend the spraying of the fruit with paraffin. A process of washing in sodium bicarbonate or borax and subsequently spraying with paraffin was one of the treatments to which the Committee paid particular attention, as it has been claimed that this process, by reducing mould incidence, reduces wastage considerably.

The Oranges supplied to the Committee for experimental purposes were representative only of the irrigated areas of Victoria, and were sent to Melbourne loosely packed in cases. Under these conditions only a slight wastage occurred through the blue and green moulds even in the fruit which was untreated. Evidence of the effects of treatment on wastage due to these moulds was thus inconclusive. The process was not found to lengthen the actual storage life of the fruit in any other way. It had a certain amount of beneficial effect in that it considerably improved the appearance of the fruit. All dirt was, of course, removed, resulting in the whole of it having a clean, bright appearance.

In regard to the paraffin itself, a light spray can be applied without deleterious effect, but a heavy spray was found sometimes actually to cause a preventative collapse of the fruit. For this reason, there is actual danger in using paraffin with Navel Oranges.

THE NORTHERN SPY STOCK QUESTION

Victorian Fruitgrower thinks it is Unsuitable for Apple Trees.

Mr. F. Kennedy, of Pakenham Gives the Result of his Fifteen Years' Experience.

THE NEED FOR RESEARCH into fruit tree stocks has long been advocated. While the Northern Spy stock has been widely accepted as a general stock on which to work fruit tree varieties, it has been acknowledged, even by those who favor this stock, that it has its limitations. There are many, however, who believe that the Northern Spy stock is unsuitable for very many varieties of Apple trees.

The original idea in using the Northern Spy stock was that it was free of woolly aphis on the roots. Seedling stocks were known to be prone to attacks of woolly aphis on the roots, although in this connection it has been noted that some of the best bearing trees in Victoria—at Harcourt for example—as also in Tasmania and in Queensland—are on seedling stocks, and although woolly aphis is present on the roots, it has not affected their bearing capacity.

For many years past a well-known Victorian grower, Mr. F. Kennedy, of Pakenham, who is an experienced propagator, has been giving close consideration to this subject, and now, as a result of patient, intensive research work, he states he is prepared to demonstrate some most important points with regard to the fruit tree stock question. Mr. Kennedy writes to the "Fruit World" as follows:—

"I am convinced that the Northern Spy stock is not suitable generally as a stock on which Apple varieties should be worked. There are many other stocks which should be used and, in particular, seedlings should be more largely used. This opinion has been arrived at after observations extending over 15 years. There are pseudo roots connected with the growth of the Northern Spy. These pseudo roots are really parasitic. They form a jelly at least twice a year and the flow of sap in the tree draws on this jelly-like substance, which kills the cambium, causes dieback, general ill-health to the tree, and tree frequently succumbs.

"Many of the cases of trees dying which have been put down generally to dieback, borer, bad drainage and other causes can be readily traced to the absorption of this poison which is exuded from the Northern Spy root.

"Careful tests have been made in this connection. I have taken the sap from these pseudo roots and injected same into the spurs of healthy trees, thus causing the death of the spurs. Other spurs in which water was injected remained healthy. A further test was made in this way. The top portion of the tree had died, but the roots remained green. This was on Northern Spy stock. Roots were taken and worked with several varieties. The trees grew normally for a couple of years, and then the portion above ground died right back.

"A further interesting test was made with the flowering Apple. I worked the flowering Apple on Northern Spy stock and the tree and the fruit developed black spot, became unthrifty, whereas another flowering Apple on its own roots grew splendidly, but the fruit did not show spot after flowering.

"In presenting this information, I do so in the hope of rendering service to the industry. I am thoroughly convinced that many of the problems which now confront fruitgrowers can be traced right back to the defec-

tive root system. Get rid of that and our problems: bitter pit, spot and crinkle, will largely disappear, and the quality of our export fruit will be improved."

ORCHARDISTS' AND FRUIT COOL STORES' ASSOCIATION.

THE QUARTERLY MEETING of the Orchardists' and Fruit Cool Stores' Association of Victoria was held at Melbourne on August 9. The President, Mr. A. E. Hocking, occupied the chair. There were also present: A. J. Harris (Blackburn), A. R. Fankhauser and G. F. Fankhauser (Burwood East), R. Langley (Croydon), R. M. Finlay, R. J. Lorimer, and A. E. Collins (Diamond Creek), R. E. Petty (Doncaster Central), J. H. Lang (Harcourt), F. Unthank (Hastings), Frank Petty (Orchardists), H. Thatcher and J. G. Aird (Ringwood), T. W. White (Somerville), H. J. Willoughby and F. Stockton (Tyabb), H. Thatcher and F. J. Byrne (Wantirna), E. H. Hatfield (Tynong).

Death of Mr. H. L. Tompkins.—A resolution was carried in silence, all members standing, expressing sympathy with the relatives of the late H. L. Tompkins, and recording appreciation of his services to the fruit industry.

Assistance to Growers.—It was decided to request sympathetic treatment from the Government in regard to extension of time for repayment of loans; further, the interest charged on deferred interest was too severe a burden for the industry to carry.

It was decided to seek relief from unemployment funds for necessitous fruitgrowers.

The Chairman reported that in response to a deputation organised by the Fruit Council the then Minister promised to recommend to Cabinet the appointment of an additional entomologist. It was decided to leave the matter in the hands of the President and Secretary.

Spraying Materials and Lime.—The Assistant Minister to the Federal Treasurer wrote stating that the request for exemption from sales tax would be considered when it became necessary to amend the Sales Tax Assessment Acts. It was resolved to make further representations for relief.

The Secretary reported that the Taxpayers' Association was endeavoring to secure the abolition of the land tax. Decided to send £1/1/- to the funds of the Association.

Export Levy.—It was decided to confer with any other organisation with a view to arriving at a satisfactory solution of the problem of the export levy.

Crystallised Cherries.—The Secretary reported that the Executive had approached the Minister for Customs protesting against any projected removal of the embargo on crystallised Cherries. A reply had been received that the embargo was not to be removed at present.

Peninsula Cool Stores.—A resolution was adopted favoring the calling of a combined meeting of representatives of all cool stores on the Peninsula to discuss the advantages that have been gained through the activities of the Cool Stores' Association and the advantages which would accrue from the full co-operation of all stores with the Association.

MID-MURRAY NOTES.

Irrigation—Soil Moisture Tests—Early Bud Burst—Viticulture.

(By Our Correspondent.)

Renmark, 18/8/32.

A STEADY RAIN set in on Thursday, August 11, and continued off and on till Saturday, when a total of $1\frac{1}{2}$ inches was registered. This was particularly welcome in view of the fact that dry weather had previously prevailed for a long period, and our soils became so dry that ploughing had to cease.

Our first irrigation was to have commenced on August 15, but has now been postponed until the 24th. In consequence of the rain, ploughing is again in full swing, and there will now be no fear of dry conditions at bud burst for the man who is last on the irrigation roster.

The first irrigation of the season has hitherto been determined by a more or less rule of thumb method in our mid-Murray areas. Each area has an advisory board with the exception of Renmark, whose deliberations are governed by members of the Irrigation Trust. Both the Advisory Boards and Trust are elected bodies of practical growers, whose duty it is to fix a date for the various irrigations as the need arises. In the past each locality has worked independently, and while in the main this has been satisfactory, there have been occasions when unforeseen climatic conditions have led to serious loss of fruit through irrigations being delayed at a critical period.

During years of slump in dried fruit prices a desire to economise in the distribution of irrigation water induced the authorities to cut down the irrigations from 5 to 4 for the season. This practice has led to over irrigation, owing to the average grower hanging on to the water until the land is over-saturated, which brings seepage and salt troubles in its wake, and much loss of fruit through irrigations being too far apart at mid-summer. There is now a strong feeling among growers, expressed in no uncertain measure, at the Waikerie Conference of branches of the Agricultural Bureau for a return to five irrigations.

Mr. A. V. Lyon, M.Ag.Sc., has made a very careful study of this matter, and advocates five irrigations as an economic proposition, and has been instrumental in having five irrigations adopted at Merbein and Red Cliffs. There has been a big demand for his pamphlet, No. 26, issued under the C.S.I.R., setting out approximate dates for each irrigation, based on the requirements of the functional development of the vine and its fruit.

Following the soil moisture tests, Mr. Lyon has carried out during irrigations in these areas for the past two years, sufficient data has been available for him to make definite recommendations, and for the purpose of uniform action, a conference has been called for the various Advisory Boards and the Renmark Irrigation Trust to meet Mr. Lyon at the end of August.

During mid-summer it is dangerous for vines to go longer than five weeks between irrigations, and having this matter seriously in mind, the Renmark Irrigation Trust have been speeding up the delivery of water wherever possible. Pumping stations have been electrified, new channels have been constructed where necessary, others have been concreted, and the whole distribution unit has been overhauled to give better service.

Under the present Chairman, Mr. C. Katekar, the financial position has slowly but surely improved to such an extent as to make all these improvements possible out of revenue, and growers are hopeful of obtaining the fifth

irrigation without extra cost, especially when it is computed by competent authorities that little extra water will be required, owing to the fact that lighter irrigations will be the order of the day.

There is every appearance of an
early bud burst

this spring. Royal Apricots on the writer's block are in the pink stage, and will soon be out, buds on early pruned young Sultana vines are bursting, while the later pruned vines are still dormant.

Warm weather following the recent rain has caused the sap to flow, and vines being pruned at present are bleeding. Although most growers have almost completed their pruning, there are still isolated patches of unpruned vines to be seen.

At the last meeting of the Agricultural Bureau, Mr. J. Grimaud gave an address on his observations of the ravages of phylloxera in Europe and Algeria. Mr. Grimaud, who is a son of the late Dr. P. Grimaud, spent several years in France and Algeria, pursuing his studies on winemaking, and is attached to the firm of Angoves Ltd.

In the course of his address the speaker said that, so far, South Australia was particularly fortunate, inasmuch as phylloxera had not yet made its appearance in our vineyards. This scourge was the most dreaded of any vine pest, which only has as a remedy the reconstruction on resistant stock.

This year has brought a temporary cessation of grafting drying varieties on to Doradillos, owing to the improved outlook for the wine varieties.

Although the improvement in the spirit market is not immediate, there are indications that within the next few years Australian wines should be more freely used in Canada, and in England.

On the top of this comes the unofficial news that an alteration in America's attitude towards prohibition may give our country a chance to do business; and so the existing Doradillos remain for another year.—"Nemo," Renmark, S. Aust.

Later (August 29).—First irrigation again postponed: still raining.

SOUTH AUSTRALIA.

A MEETING of the Executive of the South Australian Fruit Marketing Association was held at Adelaide on July 29. There were present, Messrs. J. B. Randell (Acting President), H. N. Wicks, J. S. Hammat, F. B. James, M. G. Basey, R. O. Knapstein, R. B. Pritchard, A. O. Paterson, E. W. Dearman, D. W. Hannaford, G. Quinn, G. W. Selth, P. R. B. Searcy, G. Mack, A. R. Willmore, and the Secretary.

Lightweight Cases.—The sub committee's report was adopted and members thanked; to be released for publication shortly.

Victorian Fruit Packing Conference.—Mr. F. B. James was appointed to attend.

Standardisation of the Apple Case.—Letter from the Australian Apple and Pear Export Council, enclosing copy of letter from the special committee on fruit cases, of the Standards Association of Australia, asking for an expression of opinion as to whether Apple cases should

Letters to the Editor.

AGRICULTURAL LIME.

(To the Editor of "The Fruit World of Australasia.")

Sir,—In your issue of August 1, I read an article on lime by Mr. A. G. Strickland, M.Ag.Sc., Research Officer, Victorian Department of Agriculture. His comparisons are very puzzling.

1. He admits burnt lime has greater neutralising properties than carbonate of lime, but on exposure to air and moisture its neutralising properties diminish, and it reverts back to carbonate.

2. He states that when stored it is liable to fire and to destroy the bags.

3. Also burnt lime may destroy bacteria. He gives a schedule of costs, but he fails to add to the prices the cost of spreading on the soil per ton.

My answer why burnt lime should be used is:—

1. When finely ground, burnt lime is spread on the soil, it being free from acid, its first action is to take up acid and moisture, when this is done it is then a hydrate or slaked lime. It is still an active body and acts as a fungicide until it absorbs 44 per cent. or carbonic acid when it becomes a carbonate ready to carry on the work that is expected from the ground limestone Mr. Strickland recommends, but, to become a carbonate it has already corrected the acidity of the soil and put it in good heart and healthy condition.

2. Lime bought by the farmer is to be used on the soil, not stored in a shed to lose its properties and destroy the bags. Has Mr. Strickland ever attempted to cause a fire with burnt lime? It is an interesting experiment.

3. If bacteria, is causing the soil to become sour, then it is necessary to destroy it and make room for bacteria that will assist making sweet conditions in the soil.

Yours,

24/8/32.

"LEOBUS."

REPRESENTATION AT OTTAWA.

(To the Editor, "Fruit World.")

Sir,—If the support to the sending of a good man to the Ottawa Conference be termed "partisanship," then put me down as a partisan, and I am proud to be in the company of my fellow partisans throughout Australia who realised the necessity of the Australian fruit industry being effectively represented at the Imperial Economic Conference at Ottawa. So much for Mr. Colombie's first comment.

Now, as regards his second point—my knowledge of what transpired. I have been and am still in active contact with members of the Executive of the Australian Apple and Pear Export Council, and am as conversant as the average intelligent man with all that has transpired. Mr. Colombie mentions I have attended no meeting of the Council. He is aware that I am not a member of the Council and therefore not privileged to attend meetings.

Mr. Colombie states that he does not know why I should mix his name with the criticisms of Mr. Mills' selection. I was not aware that I had done so, but since he mentions the matter, it might be borne in mind that he nominated Mr. Sinclair McGibbon to represent Australia at the Conference. I can anticipate that his answer to this will be the non-utilisation of the funds from the inspection fee, and on the score of economy.

Mr. Colombie airily waves aside the points I made in my first letter:

(1) He declined to call a meeting of the shipper members of the Victorian Fruit Marketing Association when asked to do so (thus making our meeting informal).

(2) He resigned from the general executive (which did not appoint him) neglecting the shipper members who did appoint him.

Unquestionably his resignation should have come before the shipper members, not before the general executive, thus giving the shipper members the opportunity of electing another of their members to fill the vacancy.

Mr. Colombie says that I know why he did not attend the meeting of shippers and, that my "inference is unpardonable," I may be a partisan, but I am not a clairvoyant. I know this, that shipper members meet as occasion demands, and that Mr. Colombie (the then shippers' vice-president), who has attended previous meetings, twice refused to call the shippers together when asked to do so. Doubtless he has his own reasons for ignoring the men who appointed him, but so far he has failed to disclose them. I repeat: Had he not resigned, he would have been called to account for his actions.

To one who emphasises the necessity for "constitutional procedure," this action is not only surprising, but is utterly inconsistent. Incidentally, we are getting used to these resignations. Mr. Colombie resigned just about one year previously when Mr. Mills was appointed President of the Australian Apple and Pear Export Council, but on that occasion there was little or no publicity. Mr. Colombie was then induced to reconsider his resignation and appointed shippers' vice-president, Mr. Mills very courteously vacating that position.

Here is a further example of his inconsistency. His resignation is dated June 21, 1932, yet, while still a member of both the V.F.M.A. Executive and the Australian Apple and Pear Export Council, Mr. Colombie carried on a vigorous publicity campaign, airing his own views in opposition to the decisions of both these organisations. On his own admission, he also interviewed the Prime Minister and the Minister for Commerce and had correspondence with the Minister for Commerce on the subject under review. If he had not approved of the action of the Australian Council, and the V.F.M.A., why did he not resign before carrying on this campaign, thus being "untrammelled" to act as consistently or inconsistently as he pleased? But while remaining a member of these organisations one would imagine that loyalty was expected.

How can a democratic organisation be carried on except by majority rule? It was "unpardonable" of Mr. Colombie to carry on his propaganda campaign when still "trammelled" by being in a responsible position in fruit organisations.

I asked in my last letter, and now repeat—whom (on this Ottawa question) did Mr. Colombie, as a dissident, represent? Answer: He represented himself. Is a further example of his inconsistency necessary? Here it is.

At the 1932 January meeting of the Executive of the Australian Apple and Pear Export Council, at which Mr. Colombie was present, a resolution was unanimously carried agreeing that up to 1/16th of 1d. of the amount collected be held back for Empire Preference or other propaganda purposes. If then, this fund could not be used for any other purposes than advertising, why did Mr. Colombie agree to the deduction of 1/16th of 1d. for "Empire Preference or other propaganda purposes?"

Mr. Colombie speaks of legal advice from his solicitors. I can put him in touch with a leading firm of solicitors who will give an opinion exactly the opposite to that

expressed by his advisers. And whilst on the subject of legal advice, it might interest Mr. Colombie to know that Mr. Mills himself consulted eminent lawyers before proceeding with the matter, and further, is it likely that the Minister of Commerce (Mr. Hawker) would sign the necessary authority for \$1,000 expenses without having first thoroughly convinced himself through the Crown Law Department on the legality of using portion of the funds for the purpose under discussion.

Boiled down, Mr. Colombie's argument is this. The levy is collected for advertising and should be used for that purpose alone. Being wrong in his premises he is wrong in his conclusions. The Department of Commerce does not collect the levy for advertising. It is an inspection fee that is handed back to the industry for "Advertising, administration and such other purposes as are likely to improve the position of the producers concerned"—exactly as is done with other exporting industries. My quotation is from the official letter from the Department of Commerce. This is an effective answer to Mr. Colombie's challenge.

At the Australian Apple and Pear Export Council meeting in September, 1931, the Department was asked to collect up to 2d. per case for advertising. Later, at the famous January, 1932, Executive meeting, this request was modified and amended, providing for an inspection levy of 3ths of 1d. per bushel, 1/6th of which was to be used for the Empire Preference effort.

The Executive, by its constitution, had full power to make the request, and all present at the meeting (with the exception now of Mr. Colombie) are agreed that the money was to be used for sending a delegate to Ottawa, should same be deemed necessary.

Mr. Colombie is seriously in error when he says it was "adjudged wrong" to use the levy to send a delegation to England. The press reports show that the subject was debated on its merits, and that it was finally decided to defer the subject for a year.

And on the subject of the utilising of the funds raised by levy, the published minutes of the January Executive meeting (which Mr. Colombie attended) show that the Council had before it a report from the Australian Overseas Trade Publicity Committee. The published report states:—

"This Committee consisted of representatives of the canned fruits, dried fruits, dairy produce, egg export and fresh fruit export industries, together with Mr. Mulvany (Markets Department). The London representative was Mr. A. E. Hyland. It was not necessary that the full amount of the levy be handed over to this advertising committee—a portion could be retained for special State advertising, as for instance assisting with the cost of printing fruit wrappers; for administration expenses and for other purposes decided upon by the Council, as for example, assisting in the expenses of the proposed delegation."

So then the Executive in the exercise of its powers decided: (1) Not to send a delegation to England; (2) To reserve one-sixth of its 1932 funds for "Empire Preference" work.

Summed up—The Australian Fruit Industry is to be congratulated on having stood firm in its decision to send a representative to Ottawa and in selecting Mr. Mills. Further, it has been a pleasing feature to have had the co-operation of the Department of Markets throughout.

Mr. Colombie's views on the subject of better organisation are noted. They are not new. It is certain, however, that these will be given full consideration as better technique is developed. The organisations are as yet young and we need patience and goodwill to do the best

possible for the welfare of the industry as a whole. When these views are accepted by the majority they will doubtless be expressed in action: That is the democratic way.

The last few words in Mr. Colombie's letter were evidently meant as a stinging parting shot, which, however, has gone wide of its mark, as I would remind Mr. Colombie that there are men in the export trade to-day, including myself, who pioneered this work and placed the industry on a solid foundation many years prior to his coming to Australia. Some men work quietly but get there just the same, while others employ different methods.

I am glad Mr. Colombie finds my remarks amusing, and I shall continue to live happy in the knowledge of having contributed something to the happiness of one free, untrammelled and non-partisan soul.

In conclusion, my cheerful advice to Mr. Colombie is to play a little more golf and have a whisky and aspro when he goes to bed. He should not worry too much about the "constitution," but rather look after his own. It is the only one he's got. Cheerio.

Yours faithfully,

31 Queen-street, Melbourne. CHAS. J. PARNHAM.

Leaf Scorch.—"E.M.R.," South Franklin, Tas., writes: In your issue of February 1, 1932, there is an article upon leaf scorch of fruit trees. I believe I have trees with this disease; the manure I have used is as recommended—super., ammonia and green manure, also some years lime, but no potash. Some of my trees have the bark with a red appearance. Would this be leaf scorch too?

Answer (by F. M. Read, M.Agr.Sc., Victorian Department of Agriculture).—It would be advisable to consult the Tasmanian Department of Agriculture on the matter when the trees are in affected condition.

Leaf scorch causes a browning of the margins of the leaves. The green color of the leaves, too, becomes rather dull and flat as contrasted with the normal shiny surface of a healthy leaf. The leaves at the top of the tree are usually most affected, and these fall first, leaving the affected leading shoots defoliated before the lower leaves fall.

The bark of affected limbs may become red if exposed to the sun after the scorched leaves have developed. These leaves do not furnish normal shade. The presence of red bark, however, is not a characteristic symptom of leaf scorch, but may be associated with any faulty growth conditions.

If you suspect leaf scorch I would suggest that on a trial area you give 3-4 lbs. per tree of potash, and withhold nitrogen (either as sulphate of ammonia or any other form). I have proved this year in pot experiments that leaf scorch can be produced in Victoria by a lack of potash.

Crude Oil.—"Jonathan," Dandenong, writes: (1) Is a winter spray of crude oil and soft soap deleterious to the trees? (2) What is the best spray to use with arsenate of lead during the summer to combat black spot?

Answer (by A. A. Hammond, Victorian Department of Agriculture).—(1) Crude oil emulsified with soft soap has no deleterious effect on deciduous trees when applied during the dormant season.

(2) Lime sulphur 1 gall., lime casein spreader ½ lb., lead arsenate 5 lbs. of paste, or 2½ lbs. of powder to 80 galls. of water, is recommended as a dual purpose summer spray. It is important that the lime sulphur and arsenate be not combined until immediately before spraying, and that the spraying be done preferably in the morning of a cool fine day.

Arsenate may be combined with a 5.5.80 Bordeaux mixture, but this spray is liable to russet Jonathans.

Apple Export from Tasmania.

New System of Organization Being Considered.

CONSIDERABLE INTEREST has been created in Tasmania, and in fact, throughout Australia, because of the movement in the Island State towards the concentration of their export fruit through limited channels.

Briefly, the proposal is that the fruit for export shall be handled through the export organisations of Messrs. H. Jones' & Co. Ltd., C. Piesse & Co. Pty. Ltd., Port Huon Fruitgrowers' Co-op. Association Ltd., Tasmanian Orchardists and Producers Co. Ltd., and Peacock & Co. Ltd.

At the present time the export fruit is shipped to London brokers and salesmen through about 45 representatives in Tasmania. The new proposals would do away with the representation by the brokers' representatives, except in so far as they had buying orders, but on the other hand the overseas firms would continue to get their supplies as usual.

The overseas organisation would be that of a Committee representing the five Tasmanian exporting organisations mentioned, and this Committee would allocate to each broker and salesman a pre-arranged quantity which such broker or salesman could adequately handle.

posals they would fix the charges next year at 5 per cent. selling commission, and 10d. per case consolidated charges: at present the selling commission is 5 per cent. to 6 per cent., and consolidated charges from 1/- to 1/3 per case. Contract forms had been drawn up for growers to sign. This contract provided for a maintenance of f.o.b. sales.

Big meetings of growers were held at Cygnet, Franklin, New Norfolk, Bagdad, Huonville, and other places, growers present expressing complete accord with the new proposals.

Representatives of overseas fruit brokers firms held a meeting at Hobart and expressed strenuous opposition to the proposals, advising growers not to sign the agreement which was being drawn up.

The whole matter is receiving very careful consideration in Tasmania. The necessity has been recognised for an improvement on the present system.

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The genesis of this movement was the fact of several ships having arrived simultaneously in Britain with heavy cargoes, a heavy glut ensuing, with no ready means available of withholding supplies from the market or regulating sales. A Committee of growers met and drew up the proposals for concentration of supplies. The Committee consisted of Messrs. A. Davies (Cygnet), H. A. Warner (New Norfolk), T. A. Frankcomb (Ranelagh), A. G. Shield (Huonville), F. Harrison (Cradoc), E. Burgess (Geeveston), N. B. Barnett (Franklin), P. Upcher (Dover), B. A. Watson (Castle Forbes Bay), S. J. Bisdee (Bagdad), E. Benjafield (Nubeena), D. E. Ryan (Franklin), and Hon. James Murdoch, M.L.C. (Cambridge).

In the report, the Committee urged better organisation and concentrated marketing of Tasmanian Apples and Pears in the United Kingdom and the Continent, to secure better prices and a reduction of charges. The London representatives of the five Hobart firms had cabled stating that if Tasmanian growers supported the pro-

Opinions in the English Trade.

According to a cable message from London on August 26, 43 importers of Australian Apples met at the offices of the National Federation of Fruit Trades, and carried a resolution stating that the scanty information available regarding the Tasmanian proposals, did not give assurance that conditions would be improved by their adoption.

No mention had been made regarding finance, further, the proposed scheme would apparently mean a great reduction, or possible cessation of, direct purchases: therefore they did not feel justified in withdrawing their agents.

It is understood that the advices which have gone forward from Tasmania by mail, have already covered the points mentioned in the above cable; further consideration will be given to the detailed information.

Big Developments in Nut Culture.

Australian-wide Nut Association Formed.

AN IMPORTANT CONFERENCE of those interested in nut culture, was held at Murwillumbah, New South Wales, on July 17. Mr. H. L. Anthony, who presided, spoke optimistically regarding the future for the Australian nut (Macadamia).

Mr. H. Barnes, Instructor of Fruit Culture, Department of Agriculture, Queensland, denied a statement which had gained circulation to the effect that the Queensland Department of Agriculture would buy an unlimited quantity of nuts at a good figure. This was not the case; the Department, however, was anxious to encourage the culture of the Macadamia nut, and would assist in an advisory capacity.

Mr. W. R. Petrie, nurseryman and grower of Brisbane, stated that the demand had set in for improved paper-shell Pecan nuts, and the improved Macadamia varieties. The Pecan nut industry was well established in America,

sufficient resistance to enable it to be cracked by machinery without breaking the kernel.

When more was known about oil producing qualities of the nut, it might be possible to select from varieties giving larger quantities of oil than the average.

For climatic conditions, where the season allowed the maturing of the nuts all the year round, the varieties of *Macadamia integrifolia* nuts that produced two crops in the year should be selected.

Interesting information was furnished at the conference by Miss A. Steven, of Brisbane.

Mr. N. C. Hewitt, convener of the meeting, stated the nut industry had been neglected, and that there were many unexplored avenues of commerce. Mr. Hewitt congratulated the Queensland Department of Agriculture on the encouragement given to the nut industry. There was a spirit of optimism at the conference, and valuable results are anticipated.

Mr. H. J. Rumsey was elected President, the Vice-Presidents being Messrs. Petrie, Anthony, Brooks, Gaggin, Crawford, Greer, Waldron and Frederickson, with power to add. Miss Steven was elected Secretary. Her address being 22 O'Connell-street, West End, Brisbane, Queensland.

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while as regard Australia, the initial work had proved that the trees would grow over a very wide range. As regards the Macadamia, growers were wondering whether they should plant the thin shelled or the thick shelled types, and whether trees should be seedlings or grafted. The pros and cons were discussed in Mr. Petrie's paper and valuable cultural hints were given.

There was a long discussion regarding the choice of a name for the Australian Macadamia nut, and after much consideration it was finally decided to adopt the name "Australian Nut."

Mr. H. J. Rumsey stated that the Macadamia, or Australian nut had been known for about 100 years, yet its great economic value was only just being realised. The important work of classification was still awaiting attention. Trees found in the bush varied greatly in regard to size, symmetry, thickness of shell and cropping habits. Then again, there was the work of propagating them true to name. In selecting a variety of nut for propagation it should be one that produced a good crop of evenly sized nuts, without flat-sided nuts, one that the kernel comes clean from the shell, the shell should have

NUT CULTURE.

An interesting letter is to hand from Messrs. C. A. Nobelius & Sons Pty. Ltd., of the Gembrook Nurseries, Emerald, Victoria, expressing pleasure at the establishment of the Australian Nut Association, and giving helpful information re varieties. This will be published in our next issue.

Massey-Harris Implements.

Visiting fruitgrowers to this year's Melbourne Royal Show will find on the Massey-Harris stand a wide range of modern implements. A useful implement for the orchardist is the No. 14 Lever Harrow, with nine spring tynes, while the Massey-Harris spring-tyne orchard cultivator is well designed with nine oil-tempered tynes. This is also supplied with extensions and thirteen tynes for work under over-hanging branches and vines.

Other implements which will be on view include the No. 11 orchard disc harrow, grape and berry hoe, horse hoes, single-furrow ploughs, and two-furrow National vineyard plough.

Victoria.

A seasonal report for the month of July, 1932, has been received from the Department of Agriculture. Deciduous fruit trees still promise a full crop in all districts. Given normal weather conditions there should be a heavy setting of deciduous fruit of all kinds, including berries.

The Lemon crop was considerably damaged by frosts in the Murrumbidgee River districts and the Goulburn Valley, the crops at Bamawm and Murrumbidgee districts suffering the most. Mandarins also suffered rather badly.

Passion vines in the Gippsland district were damaged by frost, but no serious damage has been reported from the principal Passion growing districts.

Navel Oranges which are being marketed, are of better quality and sounder condition than at a corresponding period last season. Prices for some of the standard grades are low owing to rind injury.

Spraying is being carried out in orchards which are affected with San Jose scale.

Viticulture.

Active preparations are being made to preventively swab Sultanias with acid iron sulphate solution against black spot.

MELBOURNE ROYAL SHOW.

The Melbourne Royal Show, to be held from September 15 to 24, is organised on first-rate lines. It provides a wonderful opportunity for producers to get new ideas. Liberal prize money is offered for all varieties of fruit. The Secretary is Mr. L. Monod, 422 Collins-street, Melbourne.

SHEPPARTON.

Cool Storage Facilities.

Many growers in the Shepparton district have expressed dissatisfaction with the additional cold storage facilities being constructed by the directors of the Shepparton Fruit Preserving Company. These growers state that a cool storage space of at least 120,000 cases would not be too great a capacity for local requirements.

SPRAY DEMONSTRATION AT SOMERVILLE, VIC.

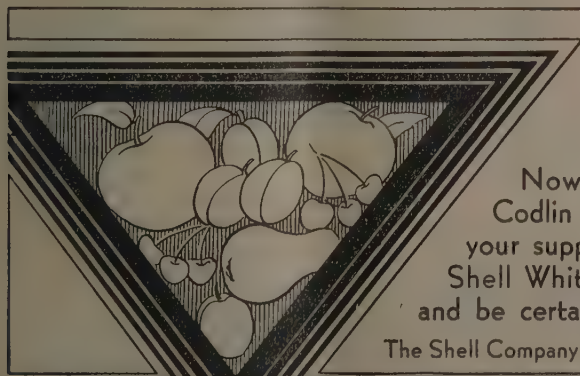
Much interest was displayed by a large number of fruitgrowers at the recent field day held at Somerville, when representatives of Messrs. Cameron, Sutherland & Seward Pty. Ltd., Riverside-avenue, South Melbourne, gave a demonstration of spraying with the Buzacott Figure "469" Portable Orchard Sprayer.

The Figure "469" appears to be very well balanced, and is of sturdy construction; although the outfit has a ground clearance of 9 in., the overall height is remarkably low, only measuring 5 ft. 3 in. The width is 5 ft. 5 in., and the length to the end of the shafts is 15 ft. The vat is made from a specially treated timber to resist the corrosive action of certain spray mixtures—it may be removed from the spray cart without disturbing either the engine or the pump.

Important features of this spray cart are the totally enclosed pump and engine. The whole of the working parts of the pump run in oil, and are totally enclosed. The pump is almost silent in operation, and air-locks, the cause of so much annoyance on some pumps, are entirely absent on the Figure "450" pump, with which the spray cart is equipped.

The field representatives of Messrs. Cameron, Sutherland & Seward gave a very fair demonstration, and appeared to have no trouble in getting an instant start from an undoubtedly very cold engine. The pump held a pressure of 350 lbs. comfortably with the two hoses operating fully open—a remarkable performance with a 2 h.p. engine. It was explained that immediately the spray nozzles are closed the pump relieves the engine of all load, by-passing the spray mixture, thus allowing the engine to run "light." This, of course, means a saving in petrol, oil, and wear and tear.

Growers were impressed by the 2 V.H. type totally enclosed Buzacott vertical engine, with which the cart is equipped to drive the pump—the engine is a simple and compact power unit. Every working part is totally enclosed; the lubricating system eliminates pumps, grease cups, and drip feed oilers, the entire engine being perfectly lubricated by splash from a generous supply of oil held in the sump. Messrs. Cameron, Sutherland & Seward Pty. Ltd., notify they will be pleased to hear from readers interested as they have an extensive range of power spraying outfits on hand.



FRUIT GROWERS! BE PREPARED!

Now is the time to prepare for the attacks of Codlin Moth and other Spring-time pests. Order your supplies of the highest-quality Spraying Oils--- Shell Whitespray, Shell Redspray and Shellicide D--- and be certain of a clean crop.

The Shell Company Ltd. will gladly forward full particulars about these sprays.

SHELL SPRAYING OILS

The Cool Storage of Fruit.

An Important Adjunct to the Industry.

Success With Cool Stores at Canneries.

Increasing Popularity of Stores on Individual Orchards.

THE STORY OF THE DEVELOPMENT of fruit cool storage in Australia is full of interest. The biggest developments have taken place in the State of Victoria. A commencement was made about 27 years ago at Doncaster, as a result of the enterprise of some of the local growers. It is a creditable achievement that at the present time there is cool store accommodation in Victoria for over 1½ million cases of fruit. Cool stores have been erected in the principal fruitgrowing districts, some co-operatively owned, others privately owned.

Cool Stores at Canneries.

A more recent development has been the discovery by co-operative canneries of the advantages of having cool storage accommodation immediately at hand. In fact, the question is now being asked, as to whether a fruit cannery can be deemed to be complete without a cold storage installation. At first cool stores were erected primarily to assist in the storage and marketing of Apples and Pears. Later it was found that by the use of cool storage the marketing period of Oranges, Peaches and some other fruits could be extended. Tests are now being conducted by the Department of Agriculture, in the cool storage of soft fruits.

Our fruit canneries have found it of advantage to have cool storage facilities readily at hand in order to ease off the peak supplies of canning Peaches, Pears, etc., thus giving a better spread to the work and enabling the canning operations to be conducted more efficiently. Another advantage worthy of mention is that of the leveling out of the ripening of Pears. A case of Pears from cool store will ripen evenly, whereas a case of Pears straight from the orchard ripens very irregularly. In fact, it can be said that ripening can be controlled, this being obviously a big advantage for cannery operations. So successful has been the cold storage installation at Shepparton, that the plant has recently been duplicated. Success has also attended the erection of cool stores at the Ardmona cannery, while a large cool store is in course of erection at the Australian Jam Company Pty. Ltd., South Yarra.

The other fruit canneries in Victoria are now contemplating the erection of cool stores.

Apart from the spread of the peak of the supplies as above mentioned, cool stores have been found remarkably serviceable in the pre-cooling of Pears for export. So important is this matter of the pre-cooling of Pears for export, that ships' engineers will refuse to load Pears which have not been pre-cooled.

Further, the pre-cooling of Peaches for interstate markets has been found to be a sound commercial proposition. By pre-cooling dessert Peaches, the disease known as transit rot—previously very destructive—has been reduced to vanishing point.

It may safely be stated that cool storage has been one of the biggest factors in the development and stabilisation of the fruit industry.

Methods of Insulation.

Various methods of insulation have been tried from time to time. It is of interest to note that the best expert advice considers that cork insulation is now available at a price which makes it the best and most economical method at the present time.

Individual Stores.

Apart from the co-operative cool stores in fruitgrowing districts, there has been a steady increase in the

number of privately owned stores. The recently erected 11,000 case cold store at the orchard of Messrs. J. Brunning & Sons, Somerville, is thoroughly up to date. The ammonia compressor is a Werner 7 ton horizontal double acting, of the type successfully used in many cool stores. The chambers are provided with a total of 3,000 feet of 1½ inch extra heavy ammonia piping, providing refrigeration by the direct expansion principle. The condensor tower is fitted with 700 feet of 1½ inch ammonia piping and a water cooling grid designed to economise in the use of water.

Any fruitgrower desirous of storing anything up to about five or ten thousand cases per year, will do well to examine the proposition of owning a small cool store in which he can set his own conditions and temperatures. Seasons vary, demanding that fruit from this or that particular orchard needs a little more attention than usual.

At the big store the temperature is the same for all, and besides it is in some cases miles away. There is no trouble or skill needed to run a small store, and the costs operating are surprisingly low.

In these times, when truck mileage and labor have to be husbanded, the investment of a small cool store right on the orchard is a proposition well worth entertaining.

The actual costs of running, say a 5,000 case cool store, are limited to power, oil and general upkeep. The operation of the plant is usually left to the owner or one of the family, and is quite a simple matter, requiring practically no skill as far as operation is concerned. It is unnecessary for even one man's entire time to be spent on a 5,000 case store.

All plants installed by R. Werner & Co. Pty. Ltd., carry a twelve months' guarantee. The advice of the company's experts is always available when required.

* * * * *

Interstate visitors connected with the fruit industry always make a special feature on coming to Victoria of examining the cool stores.

There is, in fact a strong tendency now to increase the cold storage facilities in the fruit districts and in individual orchards in the other States.

Tasmanian orchard districts in particular have developed in cold storage installations. While it is true that many varieties have long-keeping qualities when kept in ordinary storage, the fact remains, that with the added facilities which are available, only through cold storage, the life of the fruit is prolonged and the marketing period profitably extended.

Direct Expansion System.

Based on long experience, Messrs. R. Werner & Co. Pty. Ltd., now recommend the direct expansion system for small cool stores, as being economical and efficient, with low running costs.

At the recent Cool Stores Conference held at Batlow, New South Wales, appreciation was expressed for the services of Messrs. R. Werner & Co. Pty. Ltd., who have their cold storage plants in most of the Australian installations. This firm desires it to be known that their services are always available to answer technical questions relating to cold storage and new installations. At the Royal Agricultural Show to be held in Melbourne from September 15 to 24, Messrs. R. Werner & Co. Pty. Ltd., have their usual stand at corner McCracken-avenue and Lobb-street, and will be pleased to answer enquiries.

Queensland.

Nut Culture—The Banana Industry—Acquisition of Tomatoes.

(By Our Correspondent.)

Gympie, 17/8/32.

The railings of fruit and vegetables from the Gympie railway station to the southern markets during the past month amounted to 6,984 cases of Bananas, 7,476 cases beans, 70 cases Papaws, 310 cases Pineapples, and a small number of Cape Gooseberries and Tomatoes, the largest number of Bananas and beans going to Melbourne.

Nut Growers' Conference.

The conference of growers from N.S.W. and Queensland which met at Murwillumbah, N.S.W., last month, marked an important stage in the development of the nut-growing industry. It was decided to form an Australian Nut-growers' Association to function in the interests of nut growers and to further in particular the increased production and improvement of the Macadamia or Queensland nut, which, by the way, the conference recommended should in future be known as the "Australian Nut." According to the bulletin of the Imperial Institute, the Macadamia has been introduced into several of the warmer parts of the world, including Hawaii, where its culture is rapidly assuming the proportions of an important industry. Every effort is being made there to cultivate it and an Act has been in force since January, 1927, exempting from taxation all properties of the islands which are used solely for the culture or production of the Macadamia nuts, and it now behoves the Australian growers to give due attention to this matter.

The Banana Industry.

At a recent meeting of the Gympie Fruitgrowers' Association, growers severely criticised the Banana Protection Board and recommended its abolition. It was stated that an overwhelming percentage of growers had not paid their fees for last season: the Board was demanding a further fee for the current year.

The Melbourne representative of the C.O.D. wrote advising that in connection with the bagging of fruit as a treatment for thrips, the fruit under test was not absolutely clean and practically all fruit had traces on the stalk ends, but still there was a wonderful improvement as compared with fruit that had not been treated.

The balance sheet of the Kin Kin Experimental farm and the Protection Board showed that levies and registration fees, plus Government subsidy, amounted to about £8,000. Russell Island and Landsborough Associations wrote stating that they refused to pay the Board registration fee of 5/- per annum. It was resolved that the

C.O.D. be requested to furnish a statement setting out the costs of the visit of Messrs. Hack and Maher, of the Protection Board in connection with the marketing of Bananas. It was stated these negotiations had failed and a definite statement from the Sectional Group was desired as to the future policy of the C.O.D. with regard to acquisition.

The Banana industry around Gympie has suffered a decline recently owing to the ravages of rust and thrips.

A syndicate of 25 Goomborian growers have arranged with the Forestry Department to allow them an area of 25 acres for the purpose of experimenting on the forestry reserve at Tin Can Bay, about 32 miles from Gympie. This is in the hope of finding new suitable lands adjacent to here and to maintain the industry. The problem is not what the future market prices will be, but the producing of clean disease-free fruit of normal quality to accomplish which two things are necessary: combat disease and get into new fields in the hope of producing fruit free of disease for some considerable time.

Regarding the proposal to start a Banana Experimental Farm by the Government, the Banana Sectional Group Committee decided that should it eventuate it should be controlled by a scientist qualified to investigate the various diseases. However, the Group is not prepared to commit growers to any additional expenditure to the 1½d. per case with which they are at present levied.

Tobacco Culture.

The Department of Agriculture wrote stating that there was actually no market in Queensland for sun and air dried leaf. Manufacturers insisted on the flue-cured leaf.

Comparative Statistics.

The latest statistics show that about 280,000 acres are under cultivation in Australia for orchards and fruit; 8,000 families are engaged in Apple growing, an industry that covers 100,000 acres. The area under Bananas is about 2,300 acres (about 2,000 in Queensland). In citrus growing, Queensland takes fifth place, the number of producers in each State are as follows:—N.S.W., 6,500; Victoria, 1,800; South Australia, 940; W.A., 740; and Queensland, 620. The average annual value of citrus is roughly £2,000,000; Queensland share being £165,000.

Acquisition of Tomatoes.

By a majority of 140, Tomato growers in that portion of the State extending from Brisbane to Rockhampton, have approved of the acquisition of their crops by the Committee of Direction of Fruit Marketing. The result of the ballot was:—For 239, against 99. As the

Do not run any Financial Risk with your Fruit
but Consign it to

HEDLEY GEEVES LIMITED

Telegraphic Address:
"Apples, Brisbane."

(Hedley Gees, Managing Director)

Registered Shipping No. 6.

FRUIT EXCHANGE

BRISBANE

SELECTED AGENTS FOR:

Victoria: Harcourt Fruitgrowers' Progress Assn. Ltd.
Harcourt Fruit Supply Co. Ltd.
Victorian Central Citrus Assn. Ltd.

Tasmania: State Fruit Advisory Board.
New South Wales: N.S.W. Central Citrus Assn. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

majority of 70.7 of the growers who voted exceeded that required under the Fruit Marketing Organisation Act, the C.O.D. approached the Government for the issue of an Order in Council, which, it is understood, will be acceded to.

Bowen Fruit Export Co-op. Association Ltd.

THE BOWEN FRUIT EXPORT Co-op. Association Ltd., was formed in May, 1921, the chairman being Mr. James Maltby, and Secretary, Mr. George Turner, of Bowen. The Sydney manager is Mr. D. G. Wills, Haymarket, Sydney; Melbourne: Mr. D. G. Wills, c/o Mr. C. W. McRostie, 249 Franklin-street; Brisbane: Mr. D. G. Willis, c/o Hansford Reeves, Brisbane.

1,270 shares are held by 240 shareholders and paid up capital amounts to £718/15/-. During the past eleven years, 1,779,561 packages have been transported by the Association and sold in Brisbane, Sydney and Melbourne for £561,147/9/7, and after deduction of freight, inspection, etc., and 1½d. per case for the Association's handling charge, the sum of £439,064/16/8 was remitted direct to growers free of exchange.

During the same period growers requisites amounting to £79,803/18/9 have been supplied to shareholders, while £11,287/8/- has been paid in salaries, and a profit of £2,302/10/1 has accumulated.

The principal crops produced are Tomatoes, Cucumbers, Pineapples, Mangoes, table Pumpkins, English Potatoes, Eggfruit, chillies, Papaws, rock melons, water melons and tobacco.

At last tobacco sales in Brisbane, Bowen bright flue cured cigarette tobacco leaf topped the market at 4/- per lb. There are now 26 tobacco kilns in the district and great expansion is anticipated next year.

The Stanthorpe District.

Apples a Month Ahead of Southern Fruit. Plums and Apricots are Being Planted.

SOME INTERESTING COMMENTS on the Stanthorpe (Q.) district are to hand from Mr. J. Finlayson, of Brisbane, who has been a judge in the fruit section of the Queensland National Show for some years past. Mr. Finlayson writes as follows:—

It has been my privilege to visit most of the fruit-growing districts in and around Stanthorpe, and one has been much impressed by the spirit of optimism that seems to be prevalent among the growers. I am still convinced that for early and good sorts the growers here have the markets in their own hands. The present outlook is certainly good, judging from the fine appearance of healthy buds. Let us hope that late frosts and hail will be conspicuous by their absence. It strikes one that particular varieties should be the aim of the grower; it has come to me after some years of thought that Jonathan, Gravenstein, King Davids, should be specialised for early colored varieties, same being easily a month ahead of the

southern growers, which means an open market for the local grower. Other varieties are equally good; it is only good sorts that are wanted to-day. For some later sorts the one outstanding is the Granny, which can hardly be surpassed. It has the keeping qualities that are wanted for a late variety, and is gradually finding its way to the top as the one Apple that is eagerly asked for: its keeping qualities and its exceptionally fine flavor are acceptable to the public.

Plums, from all appearances, promise well and big crops are to be expected. It would seem that the favorite here is the Wilsons, as it possesses good carrying qualities, and at present it is being freely planted.

Attention is being paid to Apricots; the problem that confronts us is just the particular soil and location best suited for this fruit: further advice on this subject would be appreciated.

It is pleasing to see that nearly every grower has extended his area, and I am sure that in the very near future heavy consignments will be forthcoming. This means an earnest look around for markets, which the C.O.D. is quite willing to help in, I am sure that in Mr. W. Ranger we have a very capable leader.

Queensland.—The Orchard Fruit Supplies Company of Rockhampton, Queensland, owns five retail fruit shops as well as running a substantial wholesale and country trade. Prompt advices and returns are given.

PERSONAL.

Mr. W. Young, who is President of the Northern Victoria Fruitgrowers' Association, and a member of the Fruit Industry Sugar Concession Committee, visited Brisbane during August.

Mr. C. G. Savage, Director of Fruit Culture, Department of Agriculture, N.S.W., left Sydney in July on a visit to Canada to examine shipments of Oranges, and to report on the prospects of extension of marketing Australian Oranges in Canada.

Mr. R. E. Fowler, the well-known fruitgrower of Pomonal, Victoria, has disposed of his interests at Pomonal, and is now a Director of Messrs. N. N. McLean Pty. Ltd., wholesale fruit merchants and exporters, Melbourne. Mr. Fowler will take charge of the Fresh Fruit Export Department.

After studying agriculture at Reading University, England, Mr. Fowler entered the wholesale fruit trade, and gained extensive experience in the selling of fresh fruit in both Covent Garden and Spitalfields markets, London.

On his arrival in Australia, Mr. Fowler purchased an Apple orchard and tobacco plantation at Pomonal, and was successful in competitions with his export Apples.

Cassidy: "What's that in your pocket?"

Mike (in whisper): "Dynamite. I'm waiting for Casey. Every time he meets me he slaps me on the chest and breaks me pipe. Next time he does it he'll blow his hand off."

MANCHESTER

(Via the Ship Canal)

Nearest Port for over 200 Towns and a Population of 12 millions. Do you ship direct to this Great Market or by more expensive routes?

Address enquiries to

CAPT. W. J. WADE - 8 Bridge St., Sydney

Oust this Robber which eats your Profits!



THE Orchardist's aim is to proof his fruit against attack by Codlin Moth, by covering it with an unbroken poison film.

This is only possible by very careful and timely spraying, and by using an Arsenate of Lead that fulfils every requirement of the Orchardist.

Practical results, after all, are what the Orchardist wants, and Bickford's "Aero" brand Arsenate of Lead certainly gives him the best possible means of combating his worst enemy, the Codlin Moth.

To quote from a letter received from a leading orchardist who writes as follows:—

"We have used your "Aero" brand Arsenate of Lead for over seven years with the greatest success. We find that three thorough sprayings with 1 lb. of powder to 30 gallons of water on early varieties, and four on the later sorts, keep them quite free from Codlin Moth. We are thoroughly satisfied with "Aero" brand Arsenate of Lead, as we have compared it with other brands and have found it far superior in every way, and we intend to use it exclusively in future . . ."

Keep down your losses through Codlin by spraying your apples and pears with this superlative quality Arsenate of Lead (Powder or Paste)



BICKFORD'S "aero" BRAND ARSENATE OF LEAD

By every Test Bickford's "AERO" Brand is Best

TASMANIA (Northern Districts)—
GARDNER & MCKENZIE PTY. LTD.
64 Cameron Street, Launceston.
TASMANIA (Southern Districts)—
PORT HUON FRUITGROWERS CO-
OP. ASSOCIATION LTD.
Davey Street, Hobart.

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FELTON, GRIMWADE & BICKFORD
LTD.
297 Murray Street, Perth.
NEW SOUTH WALES—
BUZACOTT & CO. LTD.
7-11 Market Street, Sydney.

QUEENSLAND—
BUZACOTT (QUEENSLAND) LTD.
413 Adelaide Street, Brisbane
VICTORIA—
RAMSAY & TREGANOWAN LTD.
469-477 Latrobe Street, Melbourne

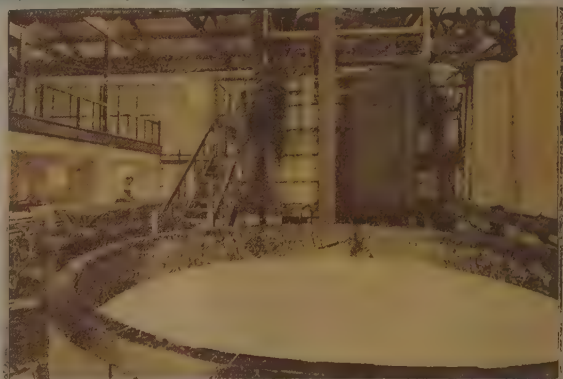
The Home of Bickford's "Aero" brand Arsenate of Lead



A view of our new Arsenate of Lead works at West Croydon. The building is constructed on the most modern factory lines and is replete with every convenience for the comfort and welfare of the staff.

WE have manufactured and sold Arsenate of Lead now for well over twenty years, and, following upon a wonderful improvement in our product some ten or twelve years ago, we placed the product on the market under the now well-known name of "Aero brand" Arsenate of Lead. We were the first firm in Australia to manufacture Arsenate of Lead Powder, and the surpassing fineness and lightness of texture of our product have never been approached by any other make.

We employ a special process which yields a product of superlative quality, and the new plant which we erected four years ago enables us to manufacture to an even higher standard than before, since new methods of control and adjustments

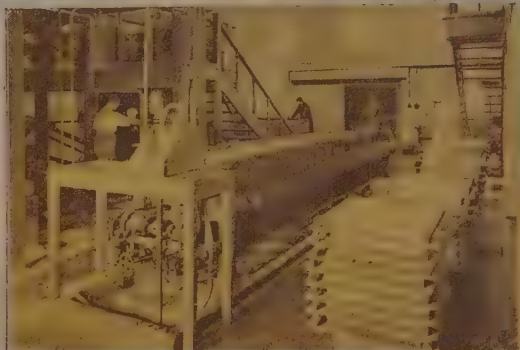


An interior view of our new Arsenate of Lead plant showing the huge vats. The one in the foreground contains the slurry as fed to the filter press pumps.

have been introduced that were not previously available. Analytical control is exercised over every batch of "Aero brand" Arsenate of Lead.

The most exacting tests are employed to ensure uniform fineness and lightness, a high percentage of Arsenic and a very low percentage of soluble Arsenic. "Aero brand" thus sets a new standard in its low soluble arsenic content.

"Aero brand" Arsenate of Lead is fully guaranteed and in whatever proportion used will give equal or superior control to that of any other brand used in similar strength.



Another view of our new Arsenate of Lead plant, showing the giant filter press where the Arsenate is separated from the water.

SOLE MANUFACTURERS:

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THRIPS INVESTIGATION.

IN PURSUANCE of its policy of thrips investigation, the Council for Scientific and Industrial Research has just published Bulletin No. 30, entitled "Bionomics and Economic Importance of Thrips Imaginis (Bagnall)" with special reference to its effect on Apple production in Australia. The author is Mr. J. W. Evans, M.A., entomologist.

This Bulletin deals with historical facts concerning thrips imaginis—description, identity and distribution, life history on cape weed flowers and on Apple and Pear blossom, breeding technique, life cycle, evidence of parthenogenesis, habits, severe outbreaks and their causes, including prediction, spring increase, outbreaks of other species, in Australia and abroad. Chapter 6 deals with economic importance: (1) effect on Apple blossom; (2) effect on other fruit blossom. Chapter 7 describes method of control; (1) Climatic factors controlling control methods; (2) repellents (field and laboratory tests); (3) attractants; (4) insecticides; (5) dusts; (6) advancement of blossoming dates; (7) cultural control; (8) biological control. It is pointed out in the foreword that the investigation has not yet reached a stage at which any definite recommendations can be made, and consequently the pamphlet is in the nature of an interim report.

It is stated in the conclusion that although the problem of thrips control is an involved one, it is not insoluble.

Thrips Investigation League.

The recently formed Thrips Investigation League is continuing its programme for collecting £1,200 per annum for three years, in order to reinforce the activities of the Council for Scientific and Industrial Research in its projected investigation into the thrips scourge. The first year's contributions have been guaranteed, and the Commonwealth Bank has sent along its cheque for £400.

Much yet remains to be done and there must be no slackening in this effort, as the C.S.I.R. desires to be assured that the £1,200 will be available regularly for the three years. Fruitgrowers and all interested are asked

to take up this matter seriously and to set about a system of systematic collection in order to ensure the continuity of this vitally important work.

THE SUGAR BURDEN.

Huge Protest Meeting in Adelaide.

TO PROTEST against the unfair incidence of the sugar situation, a huge public meeting was held in the Adelaide Town Hall at the end of July. A resolution was adopted favoring the immediate removal of the sugar embargo as in the opinion of competent authorities the sugar agreement was a violation of the Commonwealth Constitution.

It was stated that the sugar embargo involved a levy of £11,000,000 annually on the people of Australia, and that this was an unwarranted and oppressive burden. The State Premiers were asked to test the validity of the sugar agreement.

D. Harvey's Implements.—At the forthcoming Melbourne Royal Show, the stand of Mr. D. Harvey, implement manufacturer of Box Hill, will be in Plummer-avenue, opposite the entrance to the Members' Stand. Mr. Harvey will be demonstrating a full range of disc, mouldboard, tractor and road ploughs, cultivators, grape and berry hoes, orchard harness, subsoilers, mole drainers, fruit graders, tobacco planters, etc.

FRUIT TREES

End of Season Orders.

Fruitgrowers! Order immediately!

End of Season Orders promptly despatched! Goodman's offer first-class stocks—all varieties in Apples, Pears, Plums, Peaches, Apricots, etc. Strong, healthy, well-grown trees. True to label, free from insect pests, promptly despatched anywhere in Australia.

Details gladly forwarded on application.

C. J. GOODMAN,

Picnic Point Nurseries,

Bairnsdale, . . . Vic.

IN A CLASS OF ITS OWN

Lister-Myers Spray Outfit

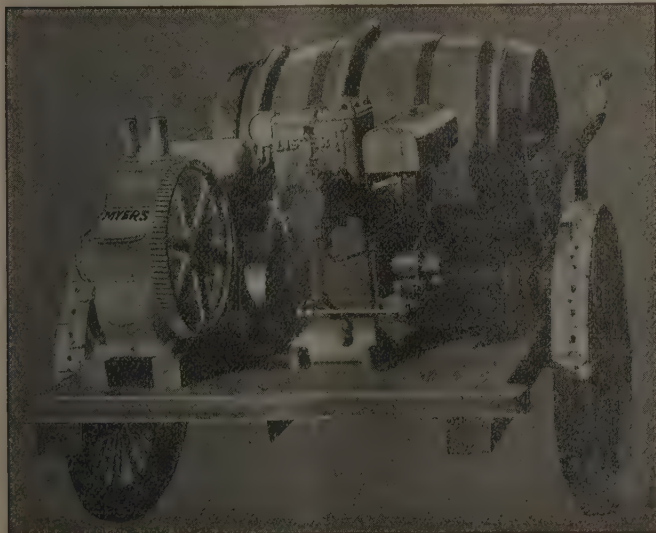
Outfit comprises the celebrated 2 h.p. "Lister" Engine direct-coupled to a "Myers" Self-Oiling Pump.

English Oak Cask, Steel Non-skidding Wheels on Transport.

Suitable for Guns or Hoses.

Free Estimates given for Stationary Spraying Plants.

A. G. WEBSTER & SONS LTD.
HOBART



TREE AND STUMP PULLING.

Unique Effectiveness of Trehwella Bros.' Implements.

BY THE USE of well-designed mechanical devices, a surprising amount of power has been made available for the use of man. In the realm of mechanics applicable to land clearing operations, the Australian firm of Trehwella Bros., of Trentham, in the State of Victoria, have rendered unique service.

Faced with the necessity of clearing the giant trees before the lands could be put to economic use, Messrs. Trehwella Bros. found that necessity was the mother of invention, thus it came about that their land clearing devices solved their own problems, and in doing so a new idea was given to the world, and now the firm has a world-wide organisation for supplying their patent implements wherever land clearing operations are carried on.

The Trehwella Monkey Jack is estimated to save 70 per cent. labor, time and money for landowners in the clearing of trees and stumps, turning an arduous and expensive operation into a speedy one-man job. The

report from the British Government which tells of tough stumps removed in nine minutes at a cost of 4d. per stump.

The 10 ton model of the Monkey Jack is exceptionally powerful and is par excellence the tool for heavy grubbing of all kinds.

Among the group of appreciated Trehwella implements the Monkey Winch deserves special mention. In the hands of two men the Monkey Winch will pull down standing timber and uproot stumps in far less time than several men can carry out the work by ordinary methods. No digging or cutting is necessary. The trees with all roots are pulled bodily over, leaving the soil ready for immediate cultivation.

This Monkey Winch can be put to a surprising number of uses. Apart from its utility for clearing land it has been proved invaluable for the raising of waggons, or motor cars when ditched, pulling of animals out of bogs, the lifting of trees, logs, etc., out of depressions. In mining work, the Trehwella Monkey Winch has won golden opinions. Contractors appreciate this implement because of its power, speed and portability. The Trehwella Monkey Winch recently passed a British Government test under the Ministry of Agriculture, extracting 29 stumps in 2½ hours. It has received the coveted silver medal of the Royal Agricultural Society of England.

Messrs. Trehwella Bros.' world-famed implements are on view at the Royal Agricultural Show, Melbourne, on September 15 to 24. Their stand is at 98 Smith-street, where all enquiries will be gladly answered.

For those desiring further information, a handsome, well illustrated catalogue is available on direct application to the head office of Messrs. Trehwella Bros. Pty. Ltd., Trentham, Victoria.



"Getting the Pull" on a big stump with the Trehwella "Monkey" Horse Grubber.

Monkey Jack has proved a good friend to Australian fruitgrowers, and other producers. The land clearing operations are reduced to a minimum. The effect of one seeing the Trehwella Monkey Jack for the first time is surprising. It is a matter of astonishment that this implement can fell trees, pull stumps, roll logs and lift stones with astonishing ease.

In grubbing flat stumps a trench is dug and a few surface roots cut, a grip being obtained on the body of a root, the stump can be easily tipped over, tearing the lower roots clean out of the ground. The Trehwella implements have won appreciation throughout Australia and throughout the world. These implements are now used in Great Britain, Ireland, Canada, New Zealand, Africa, Argentina and Federated Malay States. So great has been the demand for these implements that the firm has had to establish works at Handsworth, Birmingham, England.

Of particular interest and value is an official



"Out."—The Stump shown above successfully grubbed with the Trehwella Horse Grubber.

Compulsory Marketing Act Illegal.

Important Decision in Queensland.

Primary Producers' Organisation and Marketing Act Invalid. . . James v. Cowan Dried Fruit Case Mentioned.

THE QUESTION OF COMPULSORY organisation and pooling is again under close consideration because of the decision of Mr. Justice Webb, in the Supreme Court, Queensland. The continued existence of all compulsory pools in Queensland is threatened, and the decision is sure to have far-reaching effects in the other States, where similar legislation has been enacted, or is pending.

The judgment was delivered by Mr. Justice Webb on August 21. He held that the Primary Producers' Organisation and Marketing Act was invalid, in that it infringed section 92 of the Commonwealth Constitution, which provides that every Australian citizen should have the right to engage in interstate trade without any restriction. Under the Act referred to, commodity pools have been formed and are operating.

The case was that in which the Queensland Peanut Board brought an action against the Rockhampton Harbor Board to obtain possession of about 3,000 bags of Peanuts which were delivered by growers to the Rockhampton Harbor Board during April and May last for shipment to Southern ports. The Peanut Board claimed that, under the Primary Producers' Organisation and Marketing Acts, it is vested with ownership. The plaintiff Board claimed: (a) A declaration that the Peanuts were its property, and that it should be given access to the defendant Board's wharves and sheds for the purpose of removing the Peanuts; (b) an order for delivery of the Peanuts; (c) an injunction restraining the defendant Board from parting with or dealing with the Peanuts otherwise than by delivery to the plaintiff Board.

The principal claim of the defence was that in endeavoring to ship the Peanuts the growers were lawfully exercising their personal rights as Australians under section 92 of the Commonwealth Constitution Act, which provides for unrestricted free trade between States, and that such rights could not be interfered with by State legislation.

Mr. N. Macrossan (instructed by Messrs. Macnish, Macrossan, and Dowling) appeared for the plaintiff Board; and Mr. P. B. Macgregor (instructed by Messrs. Morris, Fletcher, and Cross, agents for Messrs. B. M. Lilley and Lilley, Rockhampton) appeared for the defendant Board.

The Judgment.

His Honor said he had no doubt that the Peanuts fell within the ambit of the Primary Producers' Organisation and Marketing Act. Section 9 (2) of that Act pro-

vided for acquisition by divesting the commodity from the grower and vesting it in the Board. There could be no divesting from the grower until the grower and the commodity were in existence. Up to that point, the grower was at liberty to make interstate contracts. The sub-section referred to did not necessarily violate section 92 of the Commonwealth Constitution, although there was still the fact that the acquisition was not with the object of defence against war, famine or pestilence, but the Order in Council of August 28, 1930 (paragraph 3) proceeded on the assumption that the diverting from the grower and vesting in the Board the ownership of the commodity for ten years, would be made to take effect as from the date of the order.

He thought that the Order in Council had failed to specify proper time for the diverting of that part of the commodity, which was not in existence when the order was made, thus the Peanuts in question were not in existence on that date, and until a proper time was provided by an amending order, the growers were at liberty to dispose of the commodity as their own property.

Dried Fruits Case Compared.

His Honor said that in James v. Cowan, Mr. Justice Starke found that under the South Australian Dried Fruits Act the Minister and the Board resolved to use their powers of compulsory acquisition to force the surplus fruit off the Australian market—in other words, to defeat section 92 of the Commonwealth Constitution. Because of the decision in the wheat case, Mr. Justice Starke decided, however, that he could not hold that this use of the powers of compulsory acquisition was invalid, as infringing section 92. The learned judge referred to the judgment of Chief Justice Griffith in the wheat case that section 92 had really nothing to say as to the question of title. On appeal, the judgment of Mr. Justice Starke was upheld by a majority of the High Court, Mr. Justice Isaacs dissenting. On appeal to the Privy Council, the judgments of the High Court and of Mr. Justice Starke were set aside, their Lordships being in accord with the judgment of Mr. Justice Isaacs, which they described as convincing. Mr. Justice Isaacs had held that the Wheat Acquisition Act of N.S.W. was not directly or indirectly interfering with commerce at all.

Free Interstate Commerce.

It was now clear that the mere compulsory acquisition of the property did not shut out section 92. If the real object of the acquisition was to enable restriction to be

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placed on interstate commerce section 92 was infringed. Mr. Macgregor contended that the judicial committee of the Privy Council had also indicated that the only compulsory acquisition—at all events the only general acquisition—which could now prevail against that section were those made to meet a national emergency of the dimensions of war, famine, or pestilence.

His Honor did not think, however, that their Lordships intended to do anything more than to make a sharp contrast between real objects that were struck by section 92 and those that were not. He took the law to be that whatever else the real object might be, if it was not to impose restrictions on interstate commerce section 92 was no contravened. He thought that the paramount object of the Primary Producers' Organisation and Marketing Act was the marketing of the commodity of a Board which shall have the power to direct where, when, and at what price the commodity should be sold. In *James v. Government of S. Aus.*, it was held that section 20 of the S. Aus. Act was invalid as being obnoxious to section 92 of the Commonwealth Constitution so far as it authorised a determination limiting the quantity which might be marketed within the Commonwealth, but there was no acquisition in that case.

Commonwealth Constitution Infringed.

Mr. Macrossan relied upon the change of ownership in this instance. The difficulty, however, was that this change of ownership in no way altered the ultimate object, namely, the marketing of the commodity for the benefit of the grower. Whatever the purpose of the acquisition, his Honor did not see how it could be valid in view of this clear objective. If the objective was to increase the quantity of the commodity by bringing in that part which could otherwise escape under section 92—by cov-

ering the gap, as it was expressed in the *Wheat Case*—the real object was plainly to defeat section 92.

Briefly then, as the real object of the Act was marketing the commodity for the growers' benefit, no more incidental steps in that direction such as the acquisition of the commodity could extend the range of the Board's jurisdiction in the face of section 92. If one direct step—a covering of the gap—was obnoxious to section 92, he could not see why a number of intermediate steps should be unobjectionable where the destination was clearly the same.

Judgment for Defendant.

Mr. Macrossan had contended that, before an Order in Council could be held invalid under section 92 of the Commonwealth Constitution it would be necessary for the defendant Board to show that there was in fact interstate trade in Peanuts at the time the order was made. In his Honor's opinion, it was sufficient to show that there was a likelihood of that trade, and that had been done. For the purposes of his judgment in this case he thought he need say nothing further than that he held the Peanuts in question had not been shown to be the property of the Queensland Peanut Board. He, therefore, gave judgment for the defendant on the non-suit.

Mr. Macgregor moved for judgment on nonsuit, with costs. His Honor entered judgment accordingly, and granted a stay of proceedings to enable the plaintiff Board to give notice of appeal to the Full Court or High Court of Australia.

Lightning Graders.—The "Lightning" Fruit Grader Company, of West Brunswick, will have their usual interesting stand at the Royal Melbourne Show. Their stand is at No. 65 Plummer-avenue, and equipment to interest every fruitgrower will be on view.

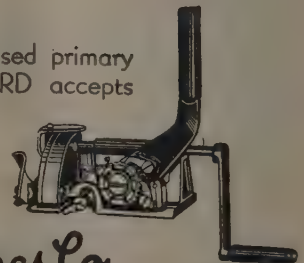
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Launceston. Hobart.
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New South Wales.

Orange District.

(From Our Correspondent.)

AFTER a lean time the past season, all varieties of fruit are showing good bud formation for the forthcoming crop. Present indications point to a dry season, which, as far as this district is concerned, will be in the growers' favour, providing the soil is kept worked.

There is ample moisture in the subsoil to withstand a dry spell, but it must be conserved. With this object in view, growers are now busy with the first ploughing.

Although there is a heavy bud formation, growers are not, generally, cutting out the fruit spurs quite so hard. Plums particularly, relying more on thinning the fruit after it has set, it being realised that with the heavy crop in sight only first quality fruit will realise remunerative prices.

Frosts have been particularly severe this winter, and we are hoping this will eliminate most of our pests (especially thrips). Although this pest was not altogether to blame for the crop failure, a cold snap just at a critical period was mainly responsible, this delayed the opening of the bloom, which enabled the thrips to enter and damage the pistil before the bloom opened. It was remarkable how Jonathans and McIntosh Apples survived the setback. They carried fair crops, and the fruit contained little or no seeds, which reacted on the color. Some fruits, when cut were found to contain only one half formed seed.

BANANA INDUSTRY IN N.S.W.

IT IS MAINLY as a result of the successful campaign against bunchy top and beetle borer, that the Banana-growing industry has been re-established in New South Wales.

The N.S.W. Minister for Agriculture (Mr. Hugh Main) recently stated that there must be no relaxation of the efforts to keep these diseases under control. The Banana industry was a valuable asset to the State, and failure to persist with the protective measures embodied in the regulations would ultimately result in the wiping out of the Banana industry, as was the case a few years ago.

Departmental Inspectors have been instructed to strictly enforce the regulations prescribing the control

measures for bunchy top and beetle borer, and legal proceedings will be taken against any growers who fail to comply with the law.

Hornsby Show.—The Hornsby and District Show and Recreation Association held their first show during July. In the fruit section the principal awards were as follows:—Fruit.—Oranges, common: Edgar Thomas. Joppas, Navels, Mandarins, and any other variety: R. J. Fagan. Grape Fruit: R. J. Fagan. Lemons: A. Cooney. Passion-fruit: C. H. Sanders. Case Oranges, common: E. Thomas. Any other variety and Navels: R. T. Fagan. Oranges, in bunch: E. Thomas.

BOTTLED ORANGE JUICE IN N.S.W.

In order to assist growers, a scheme has been inaugurated by the Transport Commissioners, through the Railways Department, to bottle the juice of Oranges in pint containers, and to sell it on station platforms and in refreshment rooms, for sixpence a bottle.

An attractively arranged depot for the sale of the bottled Orange juice has been established, the juice being from Oranges grown in the Hawkesbury area and coastal districts.

There was a keen demand by the public for the Orange juice, the depot being opened with 100 bushels of Oranges. The Department hopes eventually to take from the coastal district growers an average of 300 bags of Oranges a day. There are about 200 Oranges in each bushel. Each bottle contains the juice of 12 Oranges, or 20 ounces in all.

DRIED TREE FRUITS

Wanted for Largest Distributor in
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Best Prices.

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Are Available from the Best of Buds, Personally Selected.

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OUR SUPPLIES ARE WHOLESALE AND RETAIL.

Our Roses are of the Best and Choicest Varieties,
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We cordially invite all readers who may visit Melbourne during SHOW WEEK to call and inspect our extensive range of all classes of Farm and Orchard Machinery and General Equipment.

Our Show Rooms have been specially fitted up for your convenience.

We Will Gladly Demonstrate

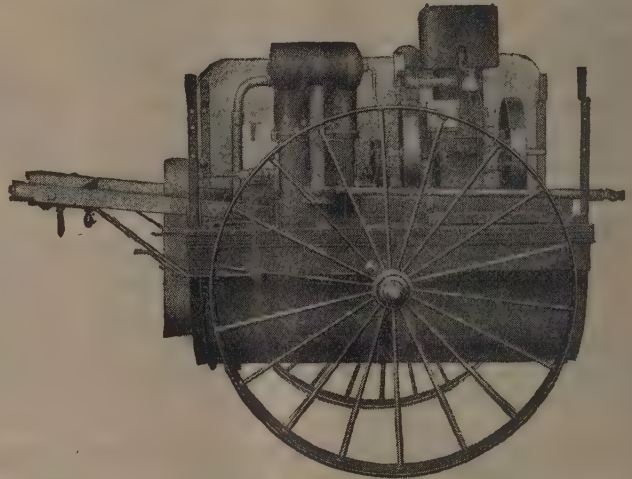
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Molong.—The Molong (N.S.W.) Fruitgrowers' Association held their annual meeting in August, when Mr. S. W. Packham was re-elected President. Other office-bearers are:—Vice-Presidents, Messrs. E. J. Allen and S. A. Wythes; Secretary and Treasurer, Mr. E. J. Morris.

INTRODUCING COLOR INTO GRANNY SMITH APPLE.

EFFORTS are being made to produce a red-colored Apple of the keeping qualities of Granny Smith, and this variety is being used as a female parent with many varieties of red color. Apple breeding was begun at the Bathurst and New England experiment farms in 1928, and steady progress has been made.

Several thousand seedlings have been raised at the Narara Nursery, and several hundreds of the most vigorous and healthy of these have been planted out at the two experiment farms mentioned.

Mr. F. T. Bowman, of the Fruit Branch of the N.S.W. Department of Agriculture, is collaborating with the plant breeding branch and reports that the most promising parents for crossing with Granny Smith appear to be Tasma, Delicious, Irish Peach, King David, Dunn's and Yates. It has been found possible to eliminate many seedlings because of their susceptibility to mildew and woolly aphis, which are favored by the climatic conditions at Narara.

THE PORT OF HULL.

The Port of Hull is in an important geographical position in relation to Continental trade. Hull firms specialise in the export trade, keeping in close touch with all the ports in Belgium, France, Holland, Sweden, Norway, Germany, Russia, Denmark, Poland, Latvia, Esthonia, Lithuania and Finland.

Express trains are provided by the London and North-Eastern Railway to carry the fruit direct from the point of landing and sale to inland destinations.

The King George Dock is one of the most modern docks in the Kingdom, and public sales are held on Mondays, Wednesdays and Thursdays and at other times as required.

The Port of Hull has regular steamship services with America, India, Australia, East, West and South Africa, the Far East, Baltic and Continental ports.

The Australian agents are Messrs. Burns, Philp & Co., the head office being at 7 Bridge-street, Sydney, N.S.W.

UP-TO-DATE BOOKKEEPING.

Bookkeeper: "How shall I book the amount with which the cashier absconded?"

Manager: "Put it down as 'Running Expenses'."

Sunshine Harvester Works.

No fruitgrower visiting the Royal Show should miss the excellent exhibit of Sunshine agricultural machinery. This includes a most comprehensive range of implements suited to orchard and vineyard cultivation.

These include the little "Sunvine" plough, specially constructed for "ploughing off." Then there are many other single-furrow and two-furrow mouldboard ploughs for orchard use. An implement that will meet with approval is the new two-disc orchard plough. Many types of Sunshine harrows will be shown, and for those who graze stock there are the "Sunblade" pasture renovating harrows.

Orchard fertiliser sowers are on view, and a very fine selection of "Satellite" horse hoes or scufflers. There are spring-tyne and rigid-tyne orchard cultivators of various sizes and types, and specially constructed cultivators for working over check banks on irrigation blocks.

MANGOSTEENS, a delicious fruit from Ceylon, have recently been introduced into Australia. Sample cases were recently brought by the R.M.S. "Malloja." The taste is something like that of a Custard Apple, and a *Monstera deliciosa*.

South Australia—Continued from page 474.

the case for all varieties of Apples, except "Jonathans," the minimum in the case of "Jonathans" to be 40 lbs.

Rough Handling in Sydney.—The Australian Apple and Pear Export Council advised that the Tasmanian State Fruit Advisory Board was convinced that shipping companies were doing all in their power to eliminate rough handling.

Mr. F. B. James confirmed his previous statement in regard to his observations when in Sydney, but he stated that as a result of the information supplied to the various organisations in Sydney, he believed that the matter was being properly taken up, and there would be a decided improvement in the future.

Thrips Investigation.—Mr. H. N. Wicks advised that a public meeting held July 22, was successful, and a branch of the Thrips Investigation League had been formed.

Mr. G. Quinn read a report received from overseas in regard to indistinct branding on cases.

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MONEY Available up to £250 for those in Rural Industries.
Lowest Rates. Easy Monthly Repayments.
"Repay us out of Income."

Advice given free, as to suitability of security offered.

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We can also offer some 25,000 Valencia, 10,000 Washington, 2,000 Eureka, 2,000 Marsh, and 2,000 Emperor, grown from buds supplied by the N.S.W. Bud Selection Society. Quantity Prices Freely on Application.

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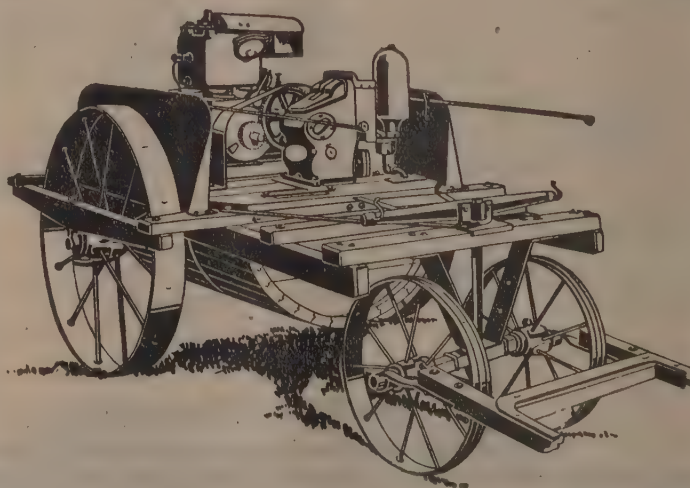
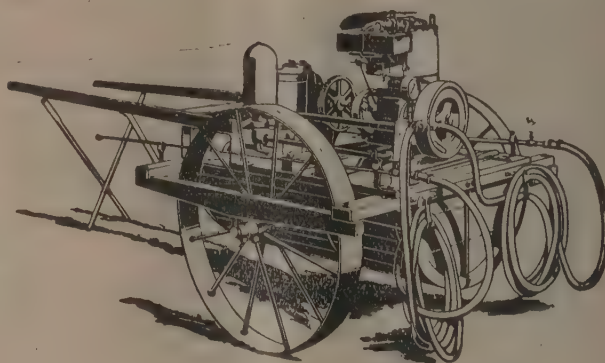
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Few realize what the difference between good and indifferent Spraying means to them

RONALDSON-TIPPETT

have co-operated with leading growers in Australia to produce a spray plant embodying all practical features essential to good spraying. Write us and we will tell you about our exclusive designs which mean so much to you in bigger and better returns from your orchard.



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you cannot afford to neglect the vital matter of good spraying.

The largest and most experienced growers throughout Australia are purchasing Ronaldson-Tippett plants in ever increasing numbers.

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Perth.

Western Australia.

Activity of Mt. Barker Co-operative Society.

In the export season just closed, Western Australia exported 704,532 cases of Apples and 44,044 cases of Pears. The Mt. Barker district contributed substantially to these totals. Mr. A. T. Booth, Secretary, Mt. Barker Fruit-growers' Co-operative Society Limited, has made some interesting comments. He states that during the past two seasons, local orchardists have had very lean years; in 1930, due to natural causes after the heavy crop of 1929, and in 1931, due to the ravages of thrips, which practically destroyed the crops. The 1932 season, however, broke all previous records. In 1929, the previous best year, 241,840 cases were shipped from Albany. Last year, only 58,276 cases were shipped, and this year 356,443 cases were sent away on nine boats.

Through the efforts of the West Australia Fruit Shippers' Committee, sufficient space was provided, and it was necessary to send an additional 30,000 cases to Fre-

mantle. Many cases were also sent to the Sydney market, so that a grand total of fruit sent out of the State from the district between Crankbrook and Albany (including Denmark) was 390,587 up to August 4.

Owing to the unsettled state of Germany, the usual quantities were not sent there, the bulk went to London. Shipments were also made to Hull, Liverpool, Hamburg, Bremen, Stockholm and Rotterdam. Again, owing to the unsettled state of the British markets, it was impossible to adopt the usual procedure of selling the major portion before shipment. Fortunately, the early returns were very satisfactory, but a little later prices receded, but were still payable. The latest cabled reports indicated unsatisfactory prices, which would not give much, if any, profit to the grower. It cost 6/6 to sell a case of fruit in London from the local station, plus 6/- to produce the fruit and pack it ready for shipment, hence the prices of 8/- to 9/- in London could not give the grower much in spite of the exchange being added.

Mt. Barker Cool Stores.

The Mt. Barker Cool Stores were filled three times over, twice for export and once for late storage, ap-

AN EXCEPTIONAL OFFER:—To NITROGEN USERS

Henry H. York & Co. Pty. Ltd., who are relinquishing the Agency, intend to dispose of their small stock of

CALNITRO IG.

Analysis (registered with the Dept.).

Nitrogen as Nitrate	10.25 per cent.
Nitrogen as Ammonia	10.25 per cent.

Total Nitrogen	20.5 per cent.
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All this NITROGEN is combined with LIME.
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PRICE (to clear), £11/2/- per ton, F.O.R. Melbourne.
Nett Cash with Order.

(Present Unit Value Price,=£17 per ton!)

Note.—This Fertiliser has given excellent results and there is only a limited stock.

Apply to

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NITRATE OF LIME

Analysis—

Nitrogen as Nitrate	15.0 per cent.
Nitrogen as Ammonia	0.5 per cent.

Total Nitrogen	15.5 per cent.
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Also—

Lime Equivalent	48 per cent.
Price, £14/10/- per ton, F.O.R. Melb.	
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Also a small quantity of

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Nitrogen	= 46 per cent.
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Price, £20 per ton, F.O.R. Melb.,	
Cash with Order.	

Note.—This price represents a unit value of 8/9!

Fruit Trees

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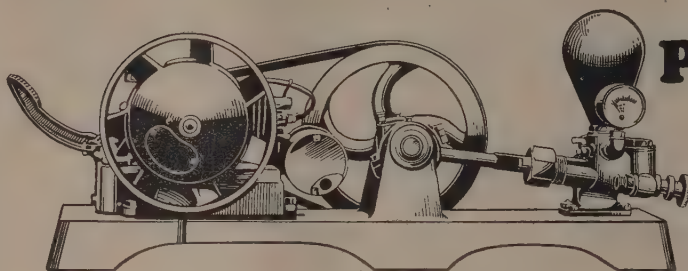
Properties 650 acres (freehold).

Private Cool Stores, 11,960 Bushel Capacity.

Established 1866.

Overseas use Bentley's Complete Phrase Code.

Fruit Growers! Tobacco Growers! Tomato Growers!



The Marino Power Spray Plant

Will discharge 80 Gals. per hour through 2 hoses, at pressure of 200 lb. per square inch.
Easily transported—on footboard of car or on sled.
One kick starts it.
Low initial cost.
Low running and upkeep.

Easily adapted for jetting, pumping, electric lighting, lime washing, etc. Prices for these extra fittings on application.

NOTE THE LOW PRICE — ONLY £58 (Including Fed. Sales Tax)

Freight Paid Victorian Railway Stations.

Complete with 30ft. of delivery hose, spray rod (7ft. 6in.) in 2 sections, suction stand agitating jet, spraying nozzle, with numerous discs, and shut off valve.

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Please forward me specifications and all particulars of the Marino Power Spray Plant.

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We manufacture a complete range of sprays for the orchardist, including:

ARSENATE OF LEAD (PASTE)
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LIME SULPHUR
WHITE OIL EMULSION
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CALCIUM CASEINATE, ETC., ETC.

All sprays will be manufactured from the same formulae as previously used by Mr. S. R. Bushnell whilst associated with Jaques Pty. Ltd. Orchardists can therefore rely upon getting the best quality fruit sprays.

Write for prices and particulars to:

ORCHARD SPRAYS PTY. LTD., 549-51 Church Street, Richmond, Victoria, or—
CAMERON, SUTHERLAND & SEWARD PTY. LTD., Riverside Avenue, Sth. Melb., Vic

INCREASED PRODUCTION AT REDUCED COST

Nitrogen—one of the most important factors in fruit tree growth and production—is now cheaper than it has ever been in Australia.

SULPHATE of AMMONIA

the principal source of nitrogen supply is available at a price which brings it well within the reach of every fruit-grower. In fact, it is not too much to say that **no fruitgrower** who wishes to take advantage of the brighter outlook ahead, can afford to do without **SULPHATE OF AMMONIA.**

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Write us for our Recommendations.

NITROGEN FERTILISERS PTY. LTD.
360 Collins Street, Melbourne, C.1.

When at the Show, visit our Stand in Lennon Avenue, alongside Commonwealth Fertilisers & Chemicals, and right opposite Robur Tea.

proximately 80,000 cases having gone through the store during the season. The growers, by pre-cooling their Pears, were able to ship them in much better condition than otherwise would have been the case.

Better Shipping Facilities Desired.

In the days of small shipments, it was sufficient to send trucks alongside the boats, now, with as many as 75,000 cases for one boat, the need for wharf shed accommodation was of great urgency. Last season there was also a serious shortage of trucks. Adequate shed accommodation at Albany was urgent: this would release many trucks.

Co-operative Society's Record.

The Mt. Barker Fruitgrowers' Co-operative Society Limited, has experienced a record season, the four principal departments are—packing of fruit for export, cool stores for export, and late markets, exporting and merchandise. One of the largest and latest models of Australian-made graders is installed for Apples. This has proved an unqualified success. The largest output per day was 1,050. The total pack for the season was 43,000 cases. Out of a total of 356,443 cases exported from Albany, the Society handled 240,557 cases and sent 19,391 to Fremantle. The Society purchased 20 per cent. of each grower's crop on a f.o.b. basis, the balance being sent to their London manager for distribution amongst the best brokers.

Levies for Organisation and Advertising.

"I think this would be an opportune time to explain," continued Mr. Booth, "the two small additional charges which appear this season on account sales. The 3/8ths of a penny collected in Australia displaces the 3d. per case previously collected in London. In addition, it was possible to send Mr. J. B. Mills, President of the Australian Apple and Pear Export Council, to Ottawa, as adviser on fresh fruit to the Australian delegation. It is gratifying to note that the brokers in London have continued their portion for advertising, and that the Commonwealth Government is continuing their subsidy. The second charge is a 3d. per case for organisation within the State, and has been brought about by the W.A. Fruitgrowers' Association, which represents ten local Associations in fruitgrowing centres. Previously, the fruitgrowing industry was severely handicapped for want of funds. Future years' levies are to be decided according to requirements and as soon as a workable fund is established it is hoped that the levy will be considerably reduced.

Thrips Investigation.

"The Australian Apple and Pear Export Council made urgent appeals

to the Federal Government to investigate the thrips problem. This matter was taken up through the Council for Scientific and Industrial Research, and £1,200 per annum for three years was requested from all connected with the Australian fruit industry to provide for additional scientists and equipment. The Commonwealth Bank had provided £400 provided the industry raised the balance of £800. The W.A. Association promised £50, but an urgent appeal was being made to increase this to £100.

"Under our scheme of organisation," continued Mr. Booth, "orchardists in future will not be called upon to pay any subscription to their local association, as each branch will receive according to its membership a subsidy from the fund established by the 3d. per case levy. It is the object of the W.A. Fruitgrowers' Association to assist the industry in every way, fighting pests, exploiting new markets and generally placing the industry on a sound basis."

GRAFTING FRUIT TREES.

Provision for Cross-Pollination.

NOW IS THE TIME for working fruit trees where growers desire to graft any branches for cross-pollination. The N.S.W. Department of Agriculture advises that the limbs should not be cut too close to the ground. When grafting old trees it is better to insert the grafts fairly high up on the limbs.

When working individual limbs, even higher working is necessary than when the whole tree is re-worked. If the limb is grafted low down, the old-established limbs will shade and rob the graft.

Even when the graft is inserted high up upon the limb, care should be taken to prevent its being hidden by growths from the limb upon which it was grafted. An outside limb should be chosen for this high working. Until the graft is sufficiently developed, the fruit should be pulled from the pollinator after setting.

"Bave-U" Power Sprayer.—Messrs. Russell and Company, engineers, of Box Hill, Melbourne, Victoria, are now advertising the "Bave-U" power sprayer. This power sprayer has a patent suction pipe strainer. It is easily cleaned and will not rust. Many other important features are included. The "Bave-U" power sprayer has been long and favorably known to Australian fruit producers. At the Royal Agricultural Show, Melbourne, this efficient power sprayer will be in operation daily at 97 Smith-street.

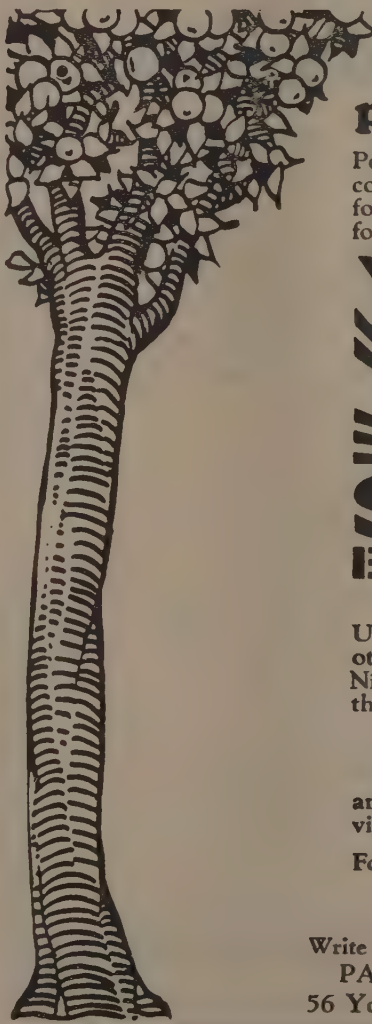
OTTAWA CONFERENCE.

Mr. J. B. Mills Appreciated.

The Australian Apple and Pear Export Council received, per courtesy of the Western District Co-operative Association, Melbourne, a cablegram from Mr. H. W. Osborne, who was the official delegate representing primary industries at the Ottawa Conference, as follows:—"Fortunately for our fruitgrowers, Mr. J. B. Mills is representing Australia, and takes part in all official conferences. He is recognised as the best authority on all matters pertaining to fruit, and without him the delegation would be at a great disadvantage."

Stop Press News.

A letter just to hand from Mr. H. W. Osborne, at Ottawa, reads as follows:—"Mr. J. B. Mills is a tower of strength in the Fruit Conferences and the orchardists of Australia are under an everlasting debt of gratitude to him. They would have suffered if he had not been here to protect their interests. All criticism would be silenced if they could only realise the work he is doing for them."



Potash payson fruit

Potash is an indispensable constituent of all fertilisers for fruit trees, and the best form in which to apply it is



Use 2 cwt. per acre with other artificials (Super, Nitrogen, etc.) and watch the

Increase in yield
Improvement in quality,
size and colour of fruit
and in the health and
vigour of your trees.

For prices apply to your
manure merchant.

Insist on "Sun Brand."

Write for further particulars to:—
PACIFIC POTASH LTD.,
56 Young Street - - Sydney

VISITORS ARE CORDIALLY INVITED

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AT THE ROYAL SHOW

PLUMMER AVENUE opposite entrance Members Stand

DEMONSTRATING A FULL RANGE OF

DISC PLOWS: MOULDBOARD PLOWS: TRACTOR PLOWS: ROAD PLOWS:
TRACTOR CULTIVATORS: OFF-SET CULTIVATORS: TANDEM DISC CULTIVATORS:
ONE-WAY ORCHARD DISC CULTIVATORS: TWO-WAY REVERSIBLE DISC CULTIVATORS:
HARROWS: SPRING AND RIGID TYNE CULTIVATORS: SKID SKIMMERS:
ORCHARD AND CITRUS SPRING TOOTH CULTIVATORS: SCUFFLERS:
GRAPE AND BERRY HOES: NURSERY CULTIVATORS: ORCHARD HARNESS:
SUB-SOILERS: HORSE AND TRACTOR MOLE DRAINERS: FRUIT GRADERS:
DEHYDRATORS: TOBACCO PLANTERS.
EVERYTHING FOR THE MAN ON THE LAND.

If you cannot visit our Stand at the Show, call at our Showrooms.

D. HARVEY, Implement Manufacturer **Box Hill, Melbourne, Aust.**

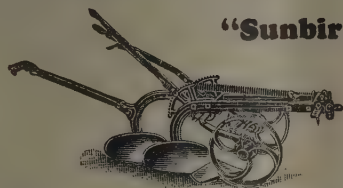
Showrooms: 440 Elizabeth Street, Melbourne.

Agents all States

SUNSHINE FARM IMPLEMENTS Work Well and Last Long

Sunshine manufactures include a range of orchard and vineyard implements designed by experts to meet Australian conditions. The well-built implements illustrated below are typical Sunshine products.

"Sunbird" Ploughs



1, 2 and 3 furrow sizes.

Splendid for burying green manurial crops and weeds.

The single-furrow size cuts furrows 9 inches wide to 6 inches deep, and is available with either fixed or movable handles. The 2 and 3-furrow sizes cut furrows 8 inches wide to 6 inches deep.

PRICES:

1-Furrow, £4/5/6.

1-Furrow (Movable Handles), £4/12/6.

2-Furrow, £12/7/-.

3-Furrow, £18/1/-.

Knife Coulter, 7/6; Circular Coulter, 15/-,
Depth Wheel, 10/-.

"Sunglow" Tyne Cultivators

Spring or Rigid Tyne.

A strong 2-horse implement.

Points supplied 1½, 2½, 4, 5 or 6 inches wide.

PRICES:

7-Tyne, Cuts

3 ft. 4 in.,

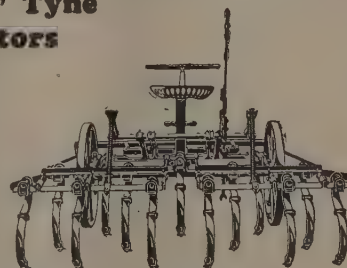
£11/17/6.

9-Tyne—Cuts 4 ft. 4 in., £12/7/-.

11-Tyne—Cuts, 5ft. 4 in., £13/10/-.

13-Tyne—Cuts 6ft. 4in., £14/10/-.

If equipped with fore-carriage in lieu of pole and swings—£1/18/- extra.



The above are net cash prices for delivery on rails, Sunshine. Terms can be quoted.
Write for 96-page General Catalogue, also Price List. They are sent free. We pay Sales Tax.

H. V. MCKAY MASSEY HARRIS PTY. LTD., (Sunshine Section) Sunshine Harvester Works, Sunshine

Branches and Agencies: Melbourne, Sydney, Adelaide, Perth, Brisbane.

Agencies at Hobart and Launceston: A. G. Webster & Sons Ltd.

CANNED FRUIT EXPORTS.

"A Good Season" says Expert.

A STATEMENT issued by the Canned Fruits Export Control Board recently makes interesting reading.

The report deals with the export of canned fruits to various destinations from the commencement (January 1), of the 1932 season to May 31. Although it will be seen from the following figures that total exports are lower than last year, the season on the whole was most satisfactory. Mr. W. J. Adams, secretary of the Board, explained that despite the poor yield, the demand was greater than in any previous year, and that the bulk of the quantity exported last year was shipped on consignment, whereas this year's pack was all sold prior to shipment. Prices were good, and British preference, coupled with the possible continuance of favorable exchange rates for some time to come, make the prospects for a bumper season next year very bright. Following is a comparison of exports of canned fruit for the last two seasons:—

	Doz. 30 oz.		Doz. 21 oz.		Doz. 16 oz.	
	1931.	1932.	1931.	1932.	1931.	1932.
U. Kingdom	574,278	441,988	—	—	51,092	134,554
N.Z. . . .	19,847	24,023	—	—	940	750
The East ..	5,887	24,047	—	80	341	1,956
Canada ..	9,630	6,244	24,822	13,590	10,100	4,155
Miscellaneous	851	1,491	—	—	217	511
Totals ..	610,493	497,793	24,822	13,670	62,690	141,296

This was made up of apricots, peaches and pears in the following proportions:—

	Doz. 30 oz.		Doz. 21 oz.		Doz. 16 oz.	
	1931.	1932.	1931.	1932.	1931.	1932.
Apricots ..	64,509	74,175	4,350	1,620	10,634	13,875
Peaches . .	399,278	201,189	17,552	10,530	32,179	61,469
Pears .. .	146,706	222,429	2,920	1,520	19,877	66,582

In addition to the above, 415 dozen apricots and 236 dozen peaches of assorted sizes were exported to Canada this season against 106 dozen peaches of miscellaneous sizes in 1931.

The most salient features are the great increase in exports to the East and the increase in the export of 16 oz. tins to Great Britain.

The total quantities exported from January 1 to July 31, 1932, were as follows:—666,212 dozen 30 oz. tins; 19,815 doz. 21 oz.; 171,524 doz. 16 oz. This included 398,265 Pears, 342,037 Peaches, and 117,249 Apricots, of the three sizes mentioned. The greatest percentage of this was in 30 oz. tins, the bulk of the fruit going to U.K. In addition to the above, 636 doz. Apricots and 369 doz. Peaches, of miscellaneous sizes, were exported to Canada.

The Goulburn Valley.

The Victorian Department of Agriculture reports during July considerable damage to the Lemon crops in some districts along the Murray River, owing to frosts.

Estimates for the Orange crop have not varied, and 75 to 85 per cent. of a normal crop is expected.

Lime-sulphur is being largely used for spraying for

San Jose scale in the Goulburn Valley, also petroleum oil emulsions. A combination of winter white oil and lime sulphur promises well as an effective control.

PEACHES FOR CANNING.

Owing to deterioration in the quality of Peaches received at the Leeton State Cannery, an investigation has been conducted by a Committee consisting of officers of the Department of Agriculture and Irrigation Commission, with Mr. C. G. Savage, Director of Fruit Culture as Chairman. The investigation was commenced at the instance of Mr. J. Brady, manager of the Leeton Cannery. The blemishes on the Pullar's Cling Peaches were set out as follows:—Thrips 34 per cent., gum 23 per cent., limb rub 7 per cent., Rutherglen bug 4 per cent., Golden Queen: thrips 59 per cent., gum 16 per cent., limb rub 7 per cent., tree hopper 4 per cent. Pelora: thrips 17 per cent., tree hoppers 27 per cent., limb rub 8 per cent. Levis: thrips 4 per cent., leaf hopper 16 per cent., limb rub 5 per cent.

These percentages do not reveal a true proportion of the fruit which would be accepted for canning, as some of the fruit showed two or more classes of blemish.

Cultural Directions.

For leaf hopper, spraying is recommended, 1 lb. lead arsenate to 40 gallons of water, plus 4 lbs. slaked lime, applied in early October. For green Peach aphid, mid-winter application of tar distillate, 1-35 is recommended, or nicotine sulphate and soft soap applied at the early picking stage. Growers should prune to prevent limb rubs; thinning of the fruit is recommended if next season be normal. Gumming, which causes discoloration beneath the skin is thought to be due to excessive winter rains. Growers should avoid planting on heavy shallow soils; green manure should be grown for turning under as a cover crop. Irrigation water should be applied with caution, preventing the trees from having wet feet. Thorough summer cultivation is recommended. Manurial tests are being conducted.

Goulburn Valley District Compared.

After visiting Shepparton and Ardmona, in the Goulburn Valley, Victoria, members of the Committee state that the Goulburn Valley fruit is particularly free from blemish, with the exception of a small percentage affected by brown rot, gumming and the Oriental Peach moth. The Goulburn Valley Peaches appeared to be of tougher texture and superior canning quality. The soils were deeper and lighter and the pruning more severe. Thinning of the fruit was regularly practised, and the standard of fruit was high. Canneries were strict with the growers, and refused to take blemished fruit for canning as first grade. Fruit considered to be of canning quality at Leeton would only be accepted for jam at Shepparton. Cool stores at both Shepparton and Ardmona canneries had proved of great assistance in handling both the Peach and Pear crops.

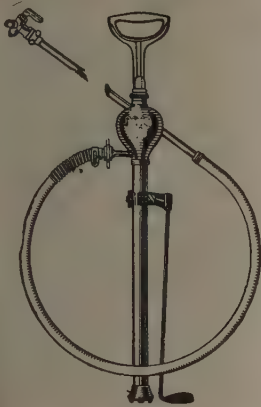
LEETON FRUITGROWERS' ASSOCIATION REPLIES.

The Leeton Producers' Rural Co-operative Society has issued a statement defending the high quality of the Leeton pack, which has taken first awards at Imperial Exhibitions in Great Britain.

The Secretary (Mr. C. R. Glover) states that the Board takes a serious view of the reflections which have been cast on the growers and the cannery staff; further, that some of the statements made by the special committee of the Department of Agriculture, above referred to, cannot be substantiated.

SPRAY PUMPS

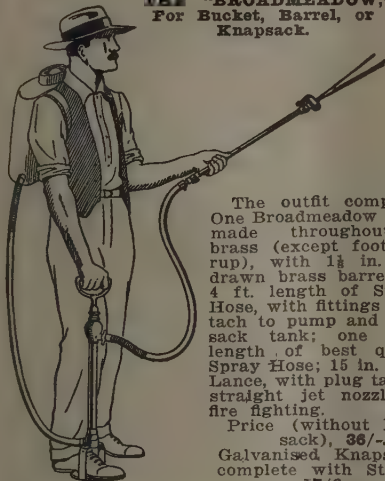
For BUCKET, BARREL or VAT



No. 33 Bucket Spray Pump, for Whitewashing, Disinfecting, Washing Down Motors, and General Spraying. Complete with 3ft. Hose, Brass Lance and Bordeaux Nozzle, 27/6.

The "Mysto Junior," similar to No. 33, but slightly smaller. Complete with 5ft. Hose, Brass Lance and Bordeaux Nozzle. Price, 24/-.

THE "BROADMEADOW," For Bucket, Barrel, or Knap-sack.



The outfit comprises: One Broadmeadow Pump, made throughout of brass (except foot stirrup), with 1½ in. solid drawn brass barrel; one 4 ft. length of Suction Hose, with fittings to attach to pump and knapsack tank; one 3 ft. length of best quality Spray Hose; 15 in. Brass Lance, with plug tap and straight jet nozzle for fire fighting.

Price (without Knap-sack), 36/-.
Galvanised Knap-sack, complete with Straps, 17/6.



THE "LADYWOOD" UNDER-ARM SPRAYER

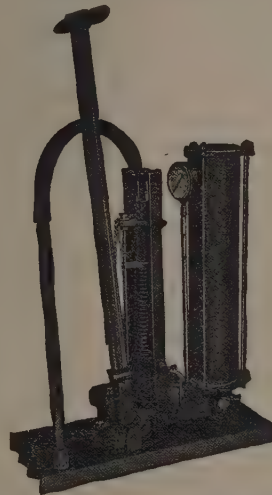
Double-acting, gives continuous spray, will throw a jet of water 30-40 feet. Made of brass, with Bronze Ball Valves. Complete with 3½ ft. Hose, Strainer, and 3 Nozzles. For use with Bucket or Knap-sack. Price, 20/-.



KNAPSACK SPRAY PUMPS, with Lead-coated Container, specially suitable for spraying Acid mixtures. With diaphragm Pump or Outside Plunger Pump. Price, £5/5/-.

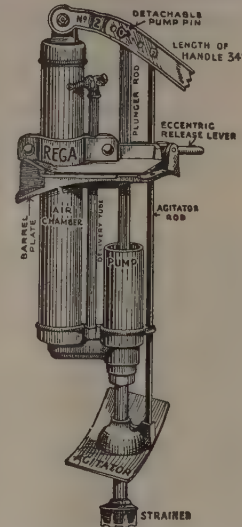
Fig. 513.—HAND-POWER SPRAY PUMP.

One of the most powerful Hand Pumps made.



The Cylinder is 2½ in. diam., porcelain-lined and non-corrosive. Fitted with Bronze Ball Valves with reversible seats. Complete with Pressure Gauge, suction Hose with Strainer,

and Hose Nipple.
Price, £13/12/6.



Barrel Spray Pump

Can be mounted on End or Side of Barrel.

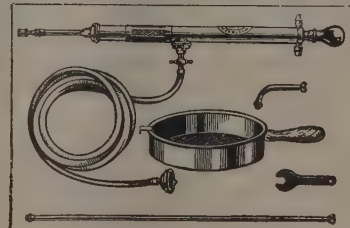
Built to a High Standard of quality, and guaranteed for life-long service, fair wear and tear excepted. A novel instant release plate is supplied for fixing to barrel. No bolts to unscrew; one movement of an eccentric lever, and the pump is instantly released for taking out of barrel. Agitator can be worked independent of pump, enabling the liquid to be thoroughly agitated before commencing to spray.

The Plunger and Agitator Rods are Steel; Valve Chamber, Valves, Pump Cylinder, Plunger, Strainer, Discharge Tee and Hose Fittings are of Brass or Hard Gunmetal. Steel Airchamber.

Complete with Instant Release Barrel Plate, Two Hose Nuts and Tails, Cyclone Duplex Nozzle, Drip Guard and Male Hose Tail.
Price, £7/10/-; or All Brass, £8/5/-.

The Mysto Gem

The Ideal All-Purpose Sprayer, giving a continuous spray. The barrel is 18 in. long by 1½ in. diam. No rubber valves or any perishable parts. Easy to operate.



Complete, as illustrated, with 10 ft. Hose and Three Nozzles (including Lime Washing Nozzle).

Price, 35/-.

The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS, FRUIT MERCHANTS, AGENTS, REPORTERS.

Advertising in this Journal.

Sydney: NEW SOUTH WALES.

Chilton, F., City Fruit Markets.
Slater, Jas., City Fruit Markets.

Melbourne: VICTORIA.

Bell, Banson Pty. Ltd., Wholesale Fruit Market.
Cave, F., & Co. Pty. Ltd., Wholesale Fruit Market.
Davis, J., Pty. Ltd., Wholesale Fruit Market.
Frankel, H. & S., Wholesale Fruit Market.
Lister, G. Pty. Ltd., Wholesale Fruit Market.
Lucas, D. S., 132 Franklin Street, Melbourne.
Millis, A., & Sons, Wholesale Fruit Market.
McLean, N. N., Pty. Ltd.
Mumford, J. G., Wholesale Fruit Market.
Pang & Co. Ltd., H. L., Wholesale Fruit Market.
Patrikeos, P. A., Wholesale Fruit Market.
Producers' Dist. Society, Wholesale Fruit Market.
Ross, J. W., Wholesale Fruit Market.
Sang Goon & Co., Wholesale Fruit Market.
Silbert, Sharp & Davies, Wholesale Fruit Market.
Stott & Sons, T., Wholesale Fruit Market.
Tim Young & Co. Pty. Ltd., Wholesale Fruit Market.
Tong, W. S., Wholesale Fruit Market.
Wade, H. M., & Co., Wholesale Fruit Market.
Wilson, H., Pty. Ltd., Wholesale Fruit Market.
Wing, R. A., & Co., Wholesale Fruit Market.
Wing, Young & Co., Wholesale Fruit Market.
Woolf, G., Wholesale Fruit Market.
Wholesale Fruit Merchants' Assn., J. D. Fraser, Temple Court, 428 Collins Street, Melbourne.
Young, J. H., & Co. Pty., Wholesale Fruit Market.

Brisbane:

QUEENSLAND.
Barr, A. S., Fruit Exchange.
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksley & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.
Whitton, W. J., & Co., Fruit Markets.

Hobart:

TASMANIA.
Eric Burgess Pty. Ltd., 88 Collins Street, Hobart.
E. R. Cottier Pty. Ltd., Temple Place, Macquarie Street.
Jones, H., Co. Ltd., Fruit Exporters.
Peacock, W. D., & Co., Fruit Exporters, and at London.

Launceston:

Bender & Co. Pty. Ltd., 100 Elizabeth Street.

Dunedin:

NEW ZEALAND.
Co-operative Fruitgrowers of Otago Ltd.

London:

GREAT BRITAIN.
Pask, Cornish and Smart, London.
Margeson & Co. Ltd., Covent Garden.
Monro, Geo., Ltd., Covent Garden.
Poupart, T. J., Ltd., Covent Garden.
Ridley, Houlding & Co., Covent Garden.
White & Son Ltd., London Fruit Exchange, Spitalfields, E.1.

Hull:

The Port of Hull, London and N.E. Railway Rep. Har-
Philp & Co. Ltd., 7 Bridge Street, Sydney

Manchester:

The Port of Manchester Rep., W. I. Wade, & Sons,
Street, Sydney.

Liverpool:

Johnson, T. S., & Co.

Bremen:

GERMANY.
Fruchthandel, Gesellschaft.

Hamburg:

Astheimer, P. H., & Son, Fruchthof
Gustav Bey, Hamburg.
Int. Fruit Import Gesellschaft.
Lutten, J. H., & Sohn, Hamburg
Stier, Aug., Fruchthof.
Timm & Gerstenkorn.

Copenhagen:

DENMARK.
International Fruit Import Co.

FRUIT EXPORTS TO GERMANY.

An interesting report is to hand from Timm and Gerstenkorn, fruit brokers, Hamburg, dealing with the 1932 exports of Apples and Pears from Australia and New Zealand into Germany. The reduced quantities met a more stable market, though at lower prices than last season. As the Reichsmark did not go off the gold standard, 25 per cent. should be added to the German realisations before comparing English values.

Germany.

Hamburg.—Messrs. Timm & Gerstenkorn report sale on June 23 of 6,200 cases of Tas. Apples, including transshipments of S. Aust. and W. Aust. Apples ex "Port Hobart" (Tasmania). The Cleos. were of varying quality and often marked by black spot and smooth russetting. This accounts for the disparities in values on Cleos. Sturmers, showing less russetting, were solicited. Jon. in small supply, but attractive: condition ripe to fairly ripe, but sound. The following prices ruled:—Tasmania, Sturmer, 7/- to 9/-; Cleo., 6/- to 9/3; Jon., 6/9 to 7/6; W.A.: Dunns, 7/- to 8/3; S. Aust.: Cleo., 6/6 to 7/9; Jon. 6/3 to 7/9.

N.S.W. Fruit Exchange.—A net loss of £382 for the year ended June 30, was shown by the N.S.W. Fruit Exchange Co. Ltd., which controls the Bathurst-street fruit markets, as against a net profit of £994 for the previous year. With £164 brought forward from last year, a debit balance of £218 is carried forward.

New South Wales.

Sydney (29/8/32).—The Fruitgrowers' Federation of N.S.W. reports prices as follow:—Apples: Tas., Cleo., 4/6 to 10/-; Crofton, 6/- to 10/-; Demo., 6/- to 10/6; Del., 5/- to 10/-; French Crab (green), 4/- to 8/-; G. Smith, 5/6 to 13/-; Jon., 5/6 to 8/6; R. Beauty, 5/- to 9/-; Scarlet P., 4/- to 9/-; Sturmer P., 4/- to 6/6; N.S.W., G. Smith, 15/- to 20/-; R. Beauty, 11/- to 14/-; W.A., G. Smith, 17/-; Yates, 13/-. Pears: Tas., Bose, 7/- to 8/-; Packham's, 7/- to 13/-; W. Cole, 6/- to 12/-; W. Nelis, 7/- to 12/-; N.S.W., Josephine, 7/- to 13/-; Vic., W. Cole, 6/- to 12/-. Bananas: Nine and eight inch, 16/- to 18/- (few higher); seven inch, 14/- to 16/-; six inch, 9/- to 13/-. Supplies are heavier from all sources, Queensland forwarding 2,559 tropical cases. Grape Fruit: Marsh's Seedless, 8/- to 11/- bush.; others, 4/- to 7/-. Lemons: Local, 4/6 to 7/- per gin case; inland, cured fruit in Canadian cases from both local and inland sources, to 9/-. Navels: Local, 4/6 to 8/- gin case; inland, 4/6 to 8/- Canadian case. Mandarins: Local, 3/- to 9/- bush.; inland, inferior fruit as low as 2/-. Oranges, 3/- to 4/6 bushel. Lemons of standard grade appear in plentiful supply. Factories purchasing peel fruit at 4/6 to 5/- bushel. Inland fruit practically off the market. Navels in some cases showing over maturity, and are firm at prices quoted. Mandarins showing wastiness and becoming puffy. Small fruit almost unsaleable, unless juicy and firm. Commons showing over-maturity and are still plentiful. Pineapples: 6/- to 9/-; few to 10/-, where special brands. Passion Fruit: 4/- to 6/- half case; few to 8/- and 9/-; inferior, 2/- to 4/- half case. Good fruit scarce. Papaws: 6/- to 8/- tropical case; colored, to 12/-. Deliveries light and fruit mostly green.

SYDNEY MARKET.

Report on Operations.

Month of August.

Navels.—During the past month, consignments were not so heavy, and with the better demand, prices moved up. Fortunately, the damage done by frost was not as great as expected, and interfered very little with the market.

Owing to the dry season, Navels have kept very well, and although the fruit is now mostly showing signs of softness, the waste is much less than is usual at this period of the year.

During the past week, fairly heavy quantities of Navels packed in bags have been arriving on the market, and this has caused a slight setback in prices.

Common Oranges.—The demand for this variety has not been good, and while good sizes have sold at fair to low prices, small sizes have only been saleable at sacrifice rates.

Mandarins have been in good supply right throughout the month, and the general quality was an improvement on July, most of the frosted fruit having been got rid of. Some very choice lines from Mangrove Mountain and the Hills District were on the market, and the large sizes of these brands brought good values. Unfortunately Mandarins in every district are running small and fruit of sizes 300 and over is in excess supply, and can only be sold at low values.

Lemons have been in light supply, with a very poor demand from retailers. Shippers, however, cannot fill their orders for special cured Lemons. There does not appear to be a shortage, but growers are holding their fruit, expecting higher prices later in the season.

Factories have been buying freely for peel purposes and prices are higher than for some years for these Lemons.

Grape Fruit.—Owing to the damage done by frosts, supplies have been falling off, and there was a shortage towards the end of the month of really special fruit. Prices have moved up and high values are being obtained for best sizes.

General.—Exporters have been very active, and with the exception of New Zealand, more fruit has been exported during the past month than for the same period in any other year, while there is a gratifying increase in the number of markets to which the fruit has been sent. It is also pleasing to note that most of the fruit exported was of good quality and got up in a more attractive manner. The packing and attention to details has shown a marked improvement over previous shipments.

The New Zealand market continued to be dull throughout the month, and prices obtained were not equal to Sydney parity, except for a few special lines.

From reports to hand from most citrus districts, it appears that Valencias are going to be much smaller in size than usual, and if this turns out to be correct, values are expected to be lower than usual.

There is a possibility of an English shipment being made about the middle of September, and as the English market prefers the small fruit, packing houses and growers will no doubt take advantage of the opportunity to send some of their small fruit overseas.—P. S. Macdermott, Sydney.

Hop Lee & Co.—The advertisement of this firm is included on the Sydney Municipal Market page. This establishment dates back to 1895, and they deal extensively in Bananas and other fruits, also vegetables. Messrs. Hop Lee & Co. receive big supplies from Queensland and overseas, and dispose of upwards of 60,000 cases of Bananas per annum. They established a record when they disposed of 1,700 cases in one week.

The bulk of this firm's trade is done in N.S.W., and the courtesy of the management has stimulated the prestige of the firm.

Victoria.

Melbourne (29/8/32).—The Wholesale Fruit Merchants' Association quote prices as follows:—Apples (per case): Eating, 6/- to 8/-; cooking, 5/- to 7/-; special higher. Bananas (Q'land), per double case, green, 7's, 8's and 9's, 14/- to 17/-; 6's, 12/- to 13/-; rust affected lower. Grape Fruit, 4/6 to 8/- bus. Lemons, 4/- to 7/-. Mandarin, 4/- to 8/-. Navels, Vic., 4/- to 7/- case; S. Aust., 6/- to 8/-; few special higher; commons, 3/- to 6/-. Poorman's Oranges, 4/- to 8/- case. Pines (double case), 7/- to 9/-. Passion Fruit (per half case), 4/- to 8/-. Papaws, 8/- to 11/- double case.

The Melbourne Market manager of the Federal Citrus Council reports sales as follow:—Navels, average standard Vic. and M.I.A., 75-84, 4/-; 96-112, 5/-; 126-168, 6/-; with a few 154-168 to 6/6 and 7/-; 182-196, 5/-; selected S.A. standard, 126 up, 8/- and 9/-; a few 154-168 10/-; plains, 4/- to 7/-, according to count and quality. Common Oranges, standard grade, 5/-; few selected higher; plains, 4/-. Mandarin, Emperors and Scarlets, good standard Vic. and N.S.W. grade, best counts (180-252), 7/- and 8/-; small-sized counts (350 counts up) and inferior lines, from 3/- and 4/-; good Mildura and S.A. Dancys and Beautys, 8/- and 9/-, best counts; with occasional sales to 10/-. Grape Fruit, Marsh's Seedless, average standard grade, 32, 5/-; 45-75, 6/-, with a few 7/-; plains, 5/-; selected standards, 8/-, with a few 9/-; a few selected Mildura and Curiwaa higher. Lemons, good standard grade, counts (180-245), 7/- and 8/-; selected grade to 9/-. Poorman's and Seville Oranges, Vic. standard grade, best counts, 68-84, to 7/-.

GROWERS!

Consign your Fruit to:—

JAMES SLATER

21 City Markets, Sydney

Postal Address: Box 36, Haymarket P.O., Sydney.
Established 1882.

Bank Reference: Commercial Banking Co., of
Sydney, Haymarket.

Specialist in Strawberries and all other Choice
Fruits.

All Victorian Fruits and Nuts handled to best
advantage on the Sydney Market.

Shipping No. 19 88 Vic. & Tas.

See Paragraph, Page 209.

Stencils, Advice Notes, etc., on Application.

EXTENDING OUR EASTERN TRADE.

The Chinese merchants of Melbourne are seeking to develop the Eastern markets for Australian products. Mr. Sang Goon, of the Melbourne Wholesale Fruit Market, is now investigating these markets: he recently left for a tour of the East. Sang Goon & Co. have branches at Sydney, Darwin, Fiji, Manila and Hong Kong, and it is the intention of Mr. Sang Goon to extend the sales of Australian fruit and other products in the countries visited by him during his tour.

He has made arrangements to introduce various lines of jams, biscuits and sweets, made in Australia, and will also test out the possibilities of marketing potatoes, onions, eggs, etc. The Manila branch last year asked for

quotes regarding the supply of 300,000 lbs. of potatoes and 100,000 lbs. of onions for the United States Navy Department at Manila, but this business was lost through some misunderstanding with Melbourne produce merchants, and the order was sent to America.

Advices have been received from Manchuria by Sang Goon & Co., which point to excellent markets in that country for Australian goods. The Canadian Trades Commission now have its representatives in Manchuria, which is regarded as the "big plum" for trade purposes in the East.

MELBOURNE FRUIT MARKET EXTENSIONS.

Several new brick stores have been erected at the corner of Therry and Queen streets, Melbourne, some of which are already occupied by merchants in the wholesale fruit trade. One of the new tenants is Mr. D. S. Lucas, who also carries on business at 132 Franklin-street. The new buildings extend for some distance on both the Queen and Therry street frontages, and is in a particularly busy section of the markets.

NEW REGISTRATIONS IN N.S.W.

"Selbest Packing House," Jondaryon-avenue, Griffith, fruit packing house—Com. 18/5/32. Proprietor: Ballantyne M. Newton. Registered 20/7/32.

Badger Bros., Dural, Orchardists—Com. 1/11/26. Proprietors: Robert J. H. and Jack Badger. Registered 15/7/32.

"YARRA" ORCHARD SPRAYS

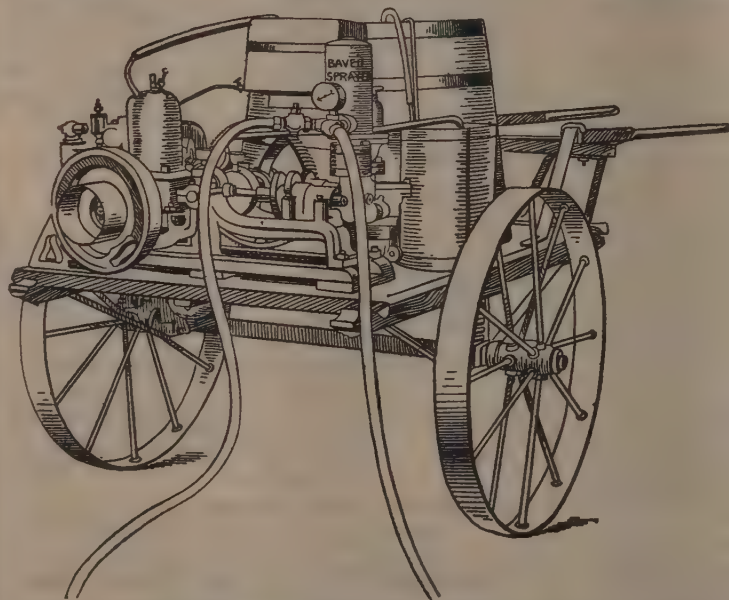
— Effective and Standard for all uses —

Prices Right

J. PARSONS & CO.

155 Yarra Street - Abbotsford - Vic.

The "Bave-U" Power Sprayer



Above All Others

6 Reasons Why

1. The Bave-U is the pioneer Australian power sprayer.
2. The Patent Suction Pipe Strainer is worth its weight in gold. . . Easily cleaned, no choked nozzles—will not rust.
3. The Agitator thoroughly stirs the mixture **all the time**.
4. The smooth working Pump ensures a steady spray.
5. The Engine is designed with a full reserve of power for even the most exacting conditions.
6. Attractively priced—the best value on the market to-day.

Russell & Co.

ENGINEERS

Box Hill, Melb. Vic.

Telephone WX 2137

At the Royal Agricultural Show, 97 Smith Street,
the "Bave-U" will be in Operation Daily.



Spray Pumps

We carry large stocks of all types of Spray Pumps, the most popular of which are:—

"LE SANS RIVAL." A Pump with a non-corrosive copper tank, capable of holding 3 1-3 gal. Supplied with hose, 18-inch brass extension, and two nozzles. Fitted with double strainer. Carried on back as knapsack.

LEAD-LINED KNAPSACK SPRAY PUMPS. For use with Sulphuric and other acids. A very useful Spray for vines and market gardens.

BUCKET SPRAY PUMPS. Several makes of these handy Pumps are available. Prices are very low.

"REGA" PNEUMATIC KNAPSACK SPRAY. (As illustrated.) Capacity, 3 gals. Made of special brass-alloy. Each Pump is tested to 60 lb. pressure.

Full particulars and prices of above Sprays will be sent on request.

McPherson's
Proprietary Limited

"Dependable Goods Since 1860"

582-592 Collins Street, Melbourne

51-65 Bathurst St., Sydney

CITRUS

DECIDUOUS

FRUIT TREES

We are Now Booking for 1932.

OUR TREES ARE TRULY
"PEDIGREE"

LIMITED QUANTITIES OF TREES TO OFFER
RAISED FROM CITRUS BUD SELECTION
COMMITTEE'S WOOD.

Get Our Prices Before Buying Elsewhere

Catalogues
Gratis.

Correspondence
Invited.

QUALITY VERY PRIME FOR 1932

F. FERGUSON & SON,

Australian Nurseries,

Hurstville - - New South Wales

Also at
Camden.

Established
1848.

The Most Extensive
Manufacturers in the
British Empire of

RUBBER STAMPS

Stencils, Marking Devices,
Inks & Acme Stamp Pads

We make a Big Range of Special
Fruit Case Marking Sets



No. 9 Spraying Machine

We also Manufacture and Supply
Spraying Machines
for All Purposes

Let us know your requirements, and we will
quote you. Ask for Spraying Equipment Price List

Excelsior Supply Co. Ltd.

160 George St. West 278 Post Office Place
SYDNEY, N.S.W. MELBOURNE, VIC.
86 Manners St., WELLINGTON, N.Z.

Queensland.

Brisbane (26/8/32).—Bananas: Cavendish, 7/3 case; special local Passion Fruit, 10/- to 12/-; other grades, 2/6 to 8/-; Custard Apples, special 6/-, others 2/6 to 3/6; smoothleaf Pines, 3/- to 5/6 case; Ripleys, local, 3/- to 5/-; Southern Navel Oranges, 7/6 to 9/- case; Southern Lemons, 9/6. Apples: Vic. Jon., 8/- to 11/-. Local Papaws, best colored 3/- to 4/-, green 1/- to 2/- case; Yarrow Papaws, 5/- to 6/-; Vic. Pears, W.N. and W.C., 11/- to 13/- case. For Tasmanian Apples the following prices ruled:—Demo., 10/- to 13/- case; G. Smiths, 10/- to 12/-; Crofts, 9/- to 13/-; S.P.M., 8/- to 10/-; S.T.P., 7/- to 8/6; F.C., 6/- to 9/-; Tasman Pride, 11/- to 12/-; A.R.O., 10/- to 11/-. Tas. Pears, W.N., 12/- to 13/- case; G.S., 10/- to 11/-; B.G., 11/-; Queensland citrus, Navels, best, 9/- to 12/- case; others, 4/- to 7/-; Q'd. Oranges, best, 5/- to 7/-; others, 3/- to 4/-; Mandarins, Glens, best 10/- to 15/-, others 4/- to 7/-; Scarlets, best 9/- to 11/-, others 4/- to 6/-; Emperors, best 7/- to 11/-, others 4/6 to 6/6; Ellendale, 5/- to 8/-; Fewtrells, 5/- to 8/-; Lemons, ordinary 3/- to 4/6; Grape Fruit, 3/- to 4/6.

Western Australia.

Perth (19/8/32).—Apples: Dunns, dumps, 6/6 to 9/- (special to 10/3); R. Beauty, 7/- to 9/6; Yates, 6/- to 12/- (special to 13/-, inferior from 3/-); G. Smith, 8/- to 12/- (special to 13/9); Cleo., 5/- to 8/6 (special to 9/9); Doherty, 5/- to 9/- (special to 10/-); Rokewood, 5/- to 8/6 (special to 10/9); Del., 10/- to 11/6 (special to 13/-). Citrus: Oranges, plain, flats 3/- to 4/6, dumps 6/- to 9/- (special to 10/-, others from 4/-); Navels, 4/- to 7/- (special to 8/3); 6/- to 11/6 (special to 13/3); Lemons, 1/6 to 4/- (special to 5/-); Mandarins, 3/- to 7/-; Passion Fruit, quarter-case, 9/-; Tomatoes, best 4/- to 7/- (special to 9/-, inferior 1/6 to 3/-).

South Australia.

Adelaide (26/8/32).—Apples, eating, 7/- to 8/- case; do., cooking, 6/- to 7/-; Lemons, 6/-; Oranges, common, 3/- to 4/-; do., blood, 4/- to 5/-; Mandarins, 10/-; Navels, 7/- to 8/-; Oranges, Poorman, 4/-; Passion Fruit, 30/- case; Pears, eating, 7/-; do., cooking, 4/-; Pineapples, 13/- to 14/-.

New Zealand.

Dunedin (18/8/32).—Messrs. Reilly's Central Produce Mart Ltd. report as follows:—Apples: Jons., 5/-; Del., 5/- to 7/-; Lord Wolseley, Alf., choice large cookers, 3/6 to 5/-; Stummers, 5/- to 7/6. Pears: W.C., 6/- to 8/6; W.N., 7/- to 8/6. Pines: 16/- to 18/-. Grapefruit: Australian, 14/6 to 16/-. Lemons: Australian, 20/- to 22/6; N.Z., 12/6. Passions: 15/- to 18/6. Poorman Oranges, 5/- to 7/6; Seville Oranges, 15/-. Bananas: Choice ripe Niues, 15/-. Mandarins, 10/- to 14/6. Oranges: Vic. Navels, 10/- to 14/-.

FRUITERER FINED.

At South Melbourne Court on July 20, Vincissy Putreno, Howard-street, North Melbourne, was fined £2 for having engaged in "topping" Tomatoes at South Melbourne market.

POULTRY NOTES.

Hints For Beginners.

Eggs for hatching should be of even size and shape. Two-ounce eggs are the most suitable. On the type of egg set depends the type of chick hatched.

Success in incubating depends largely on how the breeders have been fed. Breeding birds should have at least half their food in the form of grain. They must never be allowed to get fat by overfeeding. Hot mash is unnecessary, because they produce fat. If you must give the birds heat-giving food on cold days, add maize-meal in extra quantities to the mash, or give them a little linseed meal.

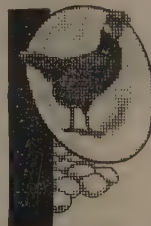
Don't cover up the front of your pens because the nights are cold. A stuffy atmosphere at night is often the cause of disease breaking out in the flock. The only pens that require curtains in bad weather are those in exposed positions.

Hatching Periods.

A pea fowl's egg	takes 28 days to hatch
A pigeon's egg	takes 18 days to hatch
A hen's egg	takes 21 days to hatch
A duck's egg	takes 28 days to hatch
A Muscovy duck's egg	takes 35 days to hatch
A turkey's egg	takes 28 days to hatch
A guinea fowl's egg	takes 28 days to hatch
A goose's egg	takes 30 days to hatch

98 EGGS Weekly instead of only 36!

THE following letter from Mr. R. S. Carter strikingly illustrates the efficiency of Karswood Poultry Spice in increasing the egg production of fowls.



Cowra, September 28, 1931.

"I find Karswood of great benefit to my fowls, and am a great believer in it. I always recommend it highly to my friends.

"I had 15 Black Orpington hens and used to get on an average of 3 dozen eggs in seven days. After using Karswood Spice, I found this improvement—in the same number of days I got on an average of eight dozen and two."

(Sgd.) R. S. Carter.

Remember Karswood Poultry Spice is non-forcing. It contains ground insects and acts as a natural stimulant to the birds. You too can have more eggs from your fowls. Give Karswood a fortnight's trial, feeding it to your hens in the mash every evening. A half pound packet is sufficient for 16 birds for 20 days.

KARSWOOD

POULTRY SPICE

Increases egg-production without forcing.

If you have no scales, a kerosene tin proves most useful when making up your various formulas. The following are the approximate weights per kerosene tin full:—

	Weight per Tin.		Weight per Tin.
Oat pollard	20 lbs.	Peas, wheat	34 lbs.
Pollard	20 lbs.	Maize, whole	30 lbs.
Bran	10 lbs.	Barley	28 lbs.
Malt combs	10 lbs.	Linseed meal	25 lbs.
Hulled oats	34 lbs.	Maize meal	22 lbs.
White oats	26 lbs.	Pea meal	26 lbs.
Meat meal	29 lbs.	Wheat meal	28 lbs.
Blood meal	27 lbs.	Barley meal	21 lbs.

As a large portion of the egg is water, do not neglect to see that it is provided fresh each day, and in the summer is kept out of the rays of the sun. Fresh green-stuff daily is of great value in keeping up the egg supply. It helps to keep the birds healthy and full of "pep."

* * * * *

The sex of pure breed day-olds cannot be told. This is only possible in certain crossbreeds, the result of special matings—known as sex-linkage.

The next best thing to sorting out the sexes at a day old is to learn sufficient about your particular breed to be able to cull out the cockerels at a very early age.

Young cockerels in most breeds are nearly always bare of feathers about the shoulder points; very often they show bare spots at the joint of the wings. They are not so well feathered down their backs, and have little or no tails. They are also heavier in bone, and usually have bigger heads, hocks and feet.

The pullets will be those that have smaller heads, are paler in comb, and well feathered on their wings and backs. They will also be the first to show their tails.

ADVERTISING FRUIT IN U.K.

The Australian fruit industry is well served by the representative in Britain of the Australian Overseas Trade Publicity Committee. Mr. A. E. Hyland is performing services of great value; the work is efficiently done and Australian fruit is being kept adequately before the British public.

PERSONAL.

A postcard has been received from Mr. C. H. Tutton, showing the Canadian Pacific s.s. "Empress of Britain," which Mr. Tutton describes as Britain's latest luxury liner—a veritable palace afloat. Six Cabinet Ministers, delegates and staff, totalled over 400 on board. Mr. Tutton continues:—"Much is expected from the Ottawa Conference, which will assist primary producers throughout the Empire."

PORT OF LONDON AUTHORITY.

The Port of London authority administers a capital of forty million pounds represented in docks, property, equipment and plant. Into London's docks come commodities from every corner of the earth. Such is the scope of the London market that there are few, if any, overseas lands which are not indebted to it in some way or other for the disposal of their products and their commercial development.

Wouldn't life be lots more happy,

If the good that is in us all,

Were the only thing about us

That folks bothered to recall?

F. CHILTON

ESTABLISHED 1894

FRUIT COMMISSION AGENT

Licensed under Farm Produce Agents Act

Highest Market Prices

Prompt Returns

Reliable Advice

Registered Address for Telegrams and Cables,
"CHILTONS"

References:—Bank of N.S.W., Haymarket, Sydney
and Growers throughout Australia

CITY FRUIT MARKETS, SYDNEY



GRUBBING

WITH A
"DIGGER" WINCH

A Man can uproot more Trees and Stumps in
a Day than he would dig out in Ten Days

QUICK MANUFACTURING CO., 75 Penders Street, Thornbury, Victoria

Thousands
in Use

It earns its
Famous
LOW PRICE
in a Few Days

Write for
Catalogue

READ THE

"Australasian Poultry World"

Something of Interest for
every Poultry Breeder.

All Newsagents 6d. per Copy

SALES TAX RELIEF.

As we go to press advice is to hand that the Federal Government has removed many items affecting fruit-growers from the operations of the Sales Tax Act. Included are spray pumps, ploughs, agricultural, horticultural and viticultural spraying and dusting materials, preparations to be used in the checking of plant and insect pest diseases.

MACADAMIA NUT IN HAWAII.

The cultivation of the Macadamia (Australian) nut has increased rapidly in Hawaii, and efforts are being made to encourage its cultivation. Since 1927, all properties of the Hawaiian Island which are used solely for its culture or production, are exempt from taxation.

TUNG OIL TREES.

As a result of spasmodic warfare in China, 450,000 Tung trees grow in Florida where only 14,000 grew in 1923. They produce nuts from which an oil essential in manufacturing high grade waterproof paints and varnishes is extracted. The nuts bring about five cents a pound. Nurseries are being established in Florida to supply the trees.

China used to be the sole source of supply for tung oil. But frequent civil wars crippled the industry and paint manufacturers turned to American farmers for the product. In addition to Florida tung groves there are extensive plantations in Alabama, Louisiana, Georgia, Mississippi and Texas.—“American Nurseryman.”

You can get

A Higher Price for Your Fruit

by consigning it to:—

**ORCHARD FRUIT SUPPLIES CO.
Rockhampton, Queensland**

This Company owns five Retail Fruit Shops as well as running a substantial Wholesale and Country trade, and can get you the best possible prices for your fruit.

Prompt advices and returns.

Give us a trial now.

... Address: Box 223, Rockhampton. 'Phone 1584. ...

-LEMONS-

We are the largest Buyers
in Australasia

C. M. BROOKE & SONS
73 Whiteman St., South Melbourne, Vic.

**PATENTS
GEORGE A. U'REN**

PATENT ATTORNEY
"Henty House," 499 LITTLE COLLINS ST.
MELBOURNE.

“Fruit World Annual”

Comprehensive review of
Australian and New Zealand
fruit industry.

“The Fruit World,” Box 1944
G.P.O., Melbourne.

“RED ROSE” Nicotine Sulphate**40 Per Cent.**

Testing
50 per cent. in the form of Nicotine
Sulphate,

AND GUARANTEED

40 per cent. PURE NICOTINE.

Indispensable to the Orchardist
Invaluable to the Poultryman.

Full directions given on each tin.

BUY BRITISH!

and INSIST upon

“RED ROSE”

GET THAT 100 PER CENT. KILL.

David T. Boyd & Co. Ltd.

59 Mark Lane, London, E.C.3

Cable Address: “DIAPHONICS,” London.

Agents for Victoria: D. & W. CHANDLER LTD.,
120 Johnston Street, Fitzroy, N.6, Victoria.

(Enquiries invited for Territorial Sole
Agents.)

Fruitgrowers !

If you want the Best Trees from Guaranteed
Pedigree Stocks and all Varieties True to Name,
Consult

G. McKee's Nurseries

Ermington, N.S.W.

(Founder of Nursery Industry in Australia.)

Established 80 years.

Specialists in

Citrus, Summer Fruits and Roses

Trees Sent Anywhere, Any Quantity.

Packing a Speciality.

Note.—We give refills free of charge to all
permanent customers.

Advice is Gratis.

Book Now, or Write for Catalogue.



City Fruit Markets Sydney N.S.W.

F. Chilton, Established 1894.
Fruit Commission Agent,
Licensed Under Farm Produce Agents' Act.
Highest Market Prices, Prompt Returns, Reliable
Advice.
Registered Address for Telegrams and Cables—
"Chiltons"
City Fruit Markets, Sydney.

FRUITGROWERS!

For Satisfactory Results, Send Your Fruit to

F. H. G. RogersFruit Selling Expert,
Municipal Markets, Sydney.

Shipping No. 83.

Established 1900.

BANANA GROWERS—For Top Market
Prices, Consign Your Fruit to**Hop Lee & Co. Ltd.**Licensed Farm Produce Agents,
8-9 Municipal Buildings,
Ultimo Road, Sydney, N.S.W.
Opposite City Fruit Markets.
Forwarding Number 25.**SUNNYSIDE ORCHARDS LTD.**Fruitgrowers and General Distributors
47 City Markets, Hay Street, Sydney
Consignments to Our Care
Expertly Attended to.References.—Bank of N.S.W., Hay-
market, Sydney; Batlow, N.S.W.
Phone M 3228.**J. Moss & Sons**Fruit Merchants,
Municipal Markets, Sydney and
Melbourne.Importers and Exporters.
Expert Salesmen and Distributors.
Telephone City 3643.
Once a Client, Always One.**FRUITGROWERS**

FOR TOP MARKET PRICES & PROMPT RETURNS,

CONSIGN YOUR FRUIT TO

F. C. KENNETT18 Municipal Markets, Quay Street,
SYDNEY.

PHONES: Business M3242; Private UJ3664.

FRUITGROWERS, PLEASE NOTE!**J. W. Morriss,**Licensed Fruit and
Produce Agent,
Municipal Markets, Sydney. Established 20 Years.
Modern Salesmanship, Reliable and Free Advice, and
Prompt Returns.References—Commonwealth Bank of Aust.
Once a Trial—Continuous Satisfaction.**FRUITGROWERS—****Ward & Felton,**Established 1904.
Licensed Farm
Produce Agents,
City Markets, Sydney, Offer You
Expert Salesmanship, Dependable Advice, Prompt
Returns, and a Cheque that is not a "Boomerang."
One Consignment—Long Attachment.

Phones MA 2810 and UJ 3827 (after 7 p.m.).

J. Stubbs,Fruit Merchant and Citrus
Specialist,
Municipal Markets, Sydney.We dispose of large consignments of Growers' Pro-
ducts. If you are not already consigning to me, I
solicit a share of your patronage.Quick Results and Prompt Payments are Our Business
Methods. Telephone MA 1758.**FRUIT CASES —****Griffiths Fruit Supply Ltd.**

Municipal Fruit Markets, Hay Street, Sydney.

Canadian Cases Made up and in Shooks.
Gin Bushels, 1/- each.All Other Kinds Fruit Cases in Stock.
Telephone MA 4826.**GROWERS! Consign your fruit to****A. E. Schuster**

STORE 16, QUAY STREET,

CITY MARKETS, SYDNEY, N.S.W.

Sound Judgment of Prices.

Prompt Returns - - - and Reliable Advice.
Bank, Commercial Banking Co. of Sydney (Haymarket).
Stencils on Application.

SHIPPING No. 270.

PHONE: MA 4296

Telephone MA 3846.

W. Musgrove & Son,Established 1900.
Licensed Farm
Produce Agents,

8 City Fruit Markets, Sydney.

Reference—Bank New South Wales, Haymarket.
Our Motto—Quick Sales and Prompt Settlements.

You will be Satisfied by Giving us a Trial.

Forwarding Numbers:

Tasmania, Victoria, S. Australia, No. 53.

Queensland, Northern Rivers, No. 18.

Fruiterers' Supply Co.,Licensed
Farm Produce
City Municipal Fruit Markets, Sydney.

Reference—E.S.&A. Bank Ltd., Haymarket

Fruit and Vegetable Commission Agents,
Also Contractors to Suburban and Country Chain Stores.
We Solicit portion of your Consignments.
Prompt Returns Immediately on Completion of Sales.
Well established business in an advantageous position
in the Market.

AGRICULTURAL DEVELOPMENT IN INDIA.

Y.M.C.A. Takes the Lead.

There are many problems facing the Governments and the people of India, and one of the greatest is the making into a productive and earning factor the masses of population. The Y.M.C.A. has been endeavoring to solve this problem and has now proved that education, along lines both theoretical and practical, will transform the community as well as the individual.

The Government has now commenced a scheme of rural re-construction, and has enlisted men with Y.M.C.A. experience to help them. The Hyderabad State has taken under its control 20 acres of land and the Baroda Government is also establishing a rural centre.

At these centres adult education will be given on agricultural subjects and on sanitation and practical work will cover the spheres of beekeeping, goatbreeding, poultry-keeping, fish-breeding. The cultivation and preservation of fruits and vegetables. Model farms will be established, and with energetic Governments interested, the progress should be sound.

Black Leaf 40

Death to Aphis (Plant Lice) and Other Insects

Aphis and other insects are common enemies of the orchardist and gardener. Protect your trees, vines and plants with "Black Leaf 40."

In the Orchard and Garden

"Black Leaf 40" is recommended for killing woolly aphis, apple aphis, peach aphis, aphis on roses, other flowers and vegetables, mussel scale (young), Harlequin fruit bug, holy or cross bug, oleander scale (young), San Jose scale (young), red scale (young), red mites (Summer), rutherglen bug, pear and cherry slug, thrip, fine scale (young), pea mite.

In the Poultry Yard

Paint the roosts lightly with "Black Leaf 40" just before the birds go to roost. Body-lice will be destroyed while the flock roosts. To help prevent mites from attacking fowls, tie or tack a piece of heavy cloth around ends of roosts and roost supports and saturate with "Black Leaf 40;" spray inside of house with "Black Leaf 40," three tablespoonsful to a gallon of water to which soap has been added.

"Black Leaf 40" has the endorsement of Agricultural Colleges, Experiment stations and orchardists. It is the World's leading aphis specific. It also kills the young larvae of many chewing insects when sprayed upon them so as to wet their bodies.

Kills By Contact and By Fumes

"Black Leaf 40" has a dual action. It kills plant insects both by fumes and by contact. This double-killing action makes "Black Leaf 40" unusually effective in insect control.

Paint Roosts . . . Kill Poultry Lice

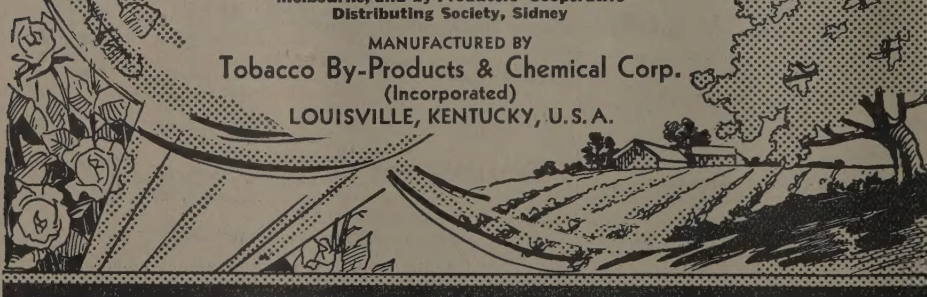
Poultrymen find that if they paint the roosts lightly with "Black Leaf 40" the lice on the birds are killed. The heat from the birds' bodies releases fumes which destroy lice, as the flock roosts on perches.

Genuine "Black Leaf 40"

"Black Leaf 40" is registered by us in Australia and New Zealand as a Trade-Mark and Brand. Users are familiar with the red labelled packages and the black leaf design prominently displayed thereon. Beware of imitations. Insist upon genuine "Black Leaf 40" made only by Tobacco By-Products & Chemical Corporation.

Distributed in Australia by Neptune Oil Company,
Melbourne, and by Producers' Cooperative
Distributing Society, Sidney

MANUFACTURED BY
Tobacco By-Products & Chemical Corp.
(Incorporated)
LOUISVILLE, KENTUCKY, U.S.A.



"When you-all gonna pay me dat ten dollahs you owes me?"

"Next week."

"Yeah, big boy, dat's what you tol' me last week?"

"Uh-huh, and dat's what Ahm gonna tell you next week cause Ahm not de kind of man dat says one thing this week and sumpin' else next week."

RECIPROCITY PAYS.

Mrs. Bunk: "I caught our daughter kissing the baker this morning."

Mr. Bunk: "Good heavens! Wasting time on him when we owe the grocer fifty pounds!"

CARRIAGE OF FRUIT BY SEA

FRUIT SHIPMENTS FOR SYDNEY AND QUEENSLAND PORTS SPECIALLY CATERED FOR.

Regular weekly service of Fast, Modern, Passenger Steamers, fitted with ventilated 'tween decks and Refrigerator Chambers.

By special arrangement Fruit, etc., for Sydney, leaving Melbourne Noon Saturdays, is delivered on Sydney Wharf 6 a.m. Mondays, ready for early morning market.

Fruit for Brisbane, leaving Melbourne Noon Saturdays, delivered Brisbane Wharf 8 a.m. Thursdays. SPECIAL REDUCED RATES OF FREIGHT.

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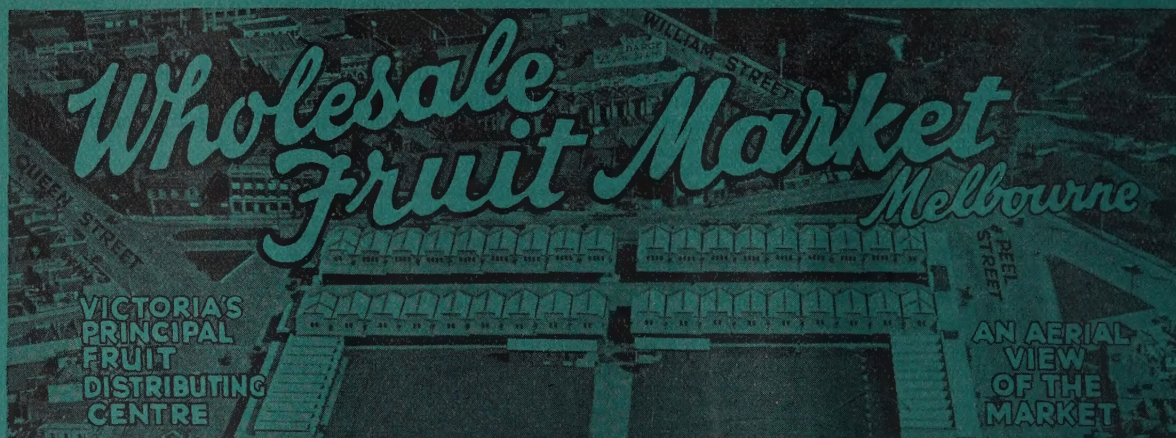
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